AYURVEDIC INTERPRETATION OF MEDICINE 1952 G.K.V.

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AYURVEDIC INTERPRETATION OF MEDICINE

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A thesis on the Tridhatu Theory of Ayurveda)

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वैद्य धर्मदत्त
स्मृति संग्रह

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गुरुकुल कांगड़ी विश्वविद्यालय

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1952

KAMLA PHARMACY

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Price : Rs. 3/8

Printed by B. Datta, Manager,
The Caxton Press, Connaught Circus, New Delhi.

FOREWORD

Those who wish to understand English books on Ayurveda must first know the fundamental facts on which the science is based.

They are very simple.

I. Panchabhoota Theory

(1) The universe consists of living and nonliving matter. The living consists of an inseparable combination of life (Atma) and inert matter (Jada Padaardha). The properties by which Atma is identified are, briefly stated, (1) Gnaana Sakti (power to know) (2) Icchaa Sakti (power to desire) and (3) Kriyaa Sakti (power to act). These properties are not found in inert matter.

(2) The inert matter is classified into 5 kinds according as it can be identified (1) by the ear (Aakasa-ether), (2) by the touch (Vaayu) (3) by the eye (Agni), (4) by the tongue (Aap) and (5) by the nose, (Prithvi). The modern science may consider that all matter is derived—out of 90 and odd elements. But, all these elements and their compounds may be classified into one or the other of the above five inert constituents of the universe, namely, Aakaasa (ether), Vaayu (air), Agni (light and heat), Aap (liquid) and Prithvi (solid), called the five bhutass (Panchabhootaas). They represent the solid, liquid, ignious, gasious and etheral states of matter.

II. Thridosha Theory

(3) In the Ayurvedic science, these five inert constituents together with life, in combination with which they exist in the living human body, are represented as consisting of only three because the first Aakaasa is too subtle and indivisible and the fifth-Prithvi—is too gross to be assimilated into living matter as such. Thus, we have Kapha constituted mainly from Prithvi and Aap. Pitta constituted mainly from Aap and Agni, and Vaayu constituted mainly from a Vayu and Aakaasa. These three constituents are called the Thridhatus in health and three doshas in disease. All that is found in the five bhootas is found in the three dhaatus but always in combination with life. Whereas, the five bhootas are inert matter dead, the three dhaatus are living matter. The difference is just like charcoal and burning or live charcoal, or like a wire without electric current in it and a live wire in which the current flows. In fact, the main purpose of all living matter is to convert nonliving or inert mineral matter called Anna-food—into living organic matter by the process of digestion and absorbtion of the material into its own substance.

III. Shadrasa Theory

(4) Of the three dhataus, Kapha is replenished by predominently sweet food and also by saltish food. Pitta is replenished by predominently acid food, and Vaayu is replenished by predominently punjent, bitter and astringent foods. Thus, sweet substances generally increase Kapha and check Vaayu. Acid foods increase Pitta and punjent and bitter foods increase Vaayu and check Kapha and so on.

(5) Generally speaking Vaayu acts through the nervous system (Gnaanavaaha Srotas), Pitta acts through the digestive and circulatory systems (Raktavaaha Srotas) and Kapha through the lymphatic system (Rasavaaha Srotas).

(6) Looking at the universe from another view-point *i.e.* that of the Vaiseshikaas—Atomic scientists of India—the whole world consists of six categories, namely, dravya (substances), Guna (property), Karma (action), Saamanya (generality), Visesha (particularity) and Samavaaya (inseparable combination). The Panchabhootas are all Dravyaas—substances which possess certain properties. Vaayu which is one of the Panchabhootas is a dravya—a substance—with some properties. Its chief property is its power to move. Vaayu has Kriyaasakti (*i. e.*) power to act—Vaayu is not a force but it is the substance whose (guna) property is force. Vaayu is no doubt the source of energy and vitality. Thus, Vaayu is not the nerve force, nor the nerve but it is the substance which is source of the nerve force or vitality. This distinction has to be noted because although Vaayu is very subtle, it is a material substance (dravya) whose property is to supply the energy to act in various ways (Karma).

(7) Sri Pandit Dharma Dutta was one of my brilliant students 30 years ago. He has spent a whole life in the scientific study of Ayurveda. I have great respect for his learning and culture. Pandit Dharma Dutta says that Vaayu is vitality or vital energy. P. 8. But it is not so. When he was a student, I also did not realise the subtle distinction between Vaayu, which is a substance and energy which is its property. I taught my students then that

Vaayu corresponds to Kriyaasakti—vitality and Pitta to heat and Kapha to moisture. This is true in a general way but I subsequently realised that all the three dhaatus Vaayu, Pitta and Kapha are dravyaas, which have definite properties and action. I request the reader to study 'Dehadhaatu Vignaanam' published by me for greater details. It is not usual that a book is criticised by the writer of the foreword. I hope that Sri Pandit Dharma Dutta will understand that in spite of my high esteem for him and his valuable contribution to the study of Ayurveda, I had to point out, in this foreword, the relationship between Vaayu and energy. This is important for a critical study of the Thridosha Theory.*

(8) I congratulate Sri Pandit Dharma Dutta for this attempt to explain Ayurveda to modern scientists, and thank him for the honour done to me in asking me to write a foreword for his valuable work. I wish the author all success in his future work in Ayurvedic Research.

Madras DR. LAKSHMIPATHI

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* It appears as if in determining nature of the basic elements, differentiation between matter and energy becomes indistinguishable. Besides, Einstein has shown that mass is convertible into energy.
—(author)

PREFACE

Interpretation of medicine is a big problem and a difficult task indeed. This is true not only with respect to the science of medicine taken as whole or in the different departments *e.g.*, anatomy, physiology, pathology, medicine etc. The interpretation, say, of anatomy under the different systems of the higher animal body in terms of osteology, myology, angiology etc. as is usually done, may not be difficult but when this method is carried to lower forms of animals *e.g.*, the amoeba, this line of interpretation becomes ineffective as they possess none of these systems. This line of approach becomes absolutely useless when one attempts to interpret the anatomy of nonliving creation. The modern science evades this difficulty by adopting different lines of approach in interpretting the different forms of creation. Ayurveda, following the *darsana sastras* (the positive sciences of the Hindus, wrongly translated as philosophies), adopts the uniform methodology in the interpretation of the anatomy of the whole universe ranging from gigantic nebulae to the infinitismal atom, on the one hand, and from man, the highest living creation to the microbe the lowest, under one line of approach— the doctrine of *panchabhautic* origin of all non-living creation. Thus Caraka and Susruta know of only one definition of the anatomy of the living creation when they say, the living body is composed of the evolute (*vikara*) of the 5 *bhutas* in which resides the *cetana* (also called *shariree* or *atma*).

Endless volumes have been written, a literature both medical and non-medical, explaining the whole range of cosmology and biology with this single doctrine, the *panchabhautic* doctrine alone. With respect to biology, the Hindu sages have resolved the *pentabhautic* doctrine into the *tridosa* doctrine, the three *dosas* (*vayu*, *pitta* and *kapha*) themselves being of *panchabhautic* in origin. Thus we find with respect to anatomy the sages say—"*Dosa dhatu malamoolam hi sareeram*"—S.S. 15/3. *i.e.*, the basic constituents of the body consist of *dosa*, *dhatu* and *mala*.

2. With respect to physiology —
    - (a) *Vata*, *pitta slesmana eba deha sambhava hetavah*, *i.e.*, *Vata*, *pitta* and *slesma* alone are the root cause of the origin and existence of the body. —S. S. 21.2.
    - (b) *Narte dehah kaphadasti na pittannacha marutat sonitadapi va nityam deha etaistu dharyate.*— *i.e.*, The body does not exist without *kapha*, *pitta* and *vayu* as also the *sonita*. The body is being supported by these (S.S. 21/4).
3. With respect to pathology—
    - (a) *Vikaro dhatu vaisammam i.e.*, the disease is the disequilibrium of the *dhatus*—(C.S. 9/3.)
    - (b) *Ta eva vyapanna pralayahetavah—i.e.*, they (the *dosas*) when vitiated cause disease and death.—S.S. 21/3.
    - (c) *Rogastu dosa vaisamyam—i.e.*, the disease is nothing but the condition of dis-equilibrium of the *dosas.*—AH. S.I./19.
    - (d) *Dosa ebahi sarvasam roganamekakaranam—i.e.*,

the only cause of all the diseases is the *dosa*—AH. S. 12/13.

4. With respect to therapeutics —
Dosa samyam arogata, *i.e.*, cure results when the *dosa* is brought back to its equilibrium. AH. S. 1/19.

Thus the whole range of the science of ayurveda is made to revolve on the pivot of the *tridosa* doctrine, and that makes it imperative that all interpretation should be in terms of tridosa. It is thus right and proper that the learned author of this book has taken up the task of "ayurvedic interpretation of medicine" almost exclusively in terms of *tridosa*.

The *Tridosa* doctrine

Here again, the task is not easy. Apart from the casual mention in the veda of the terms indicating the 3 dosas, we find Atreya for the first time, elaborating the whole science of ayurveda based on the strong foundation of the *tridosa* doctrine. It has been estimated that Atreya flourished in about 2500 B.C.

This doctrine has been followed by all subsequent writers on ayurveda even up to our own times. It has thus been able to stand the test of time for a period of about 4500 years, and every time it has been found to be as efficient as ever, and no one from Atreya to Gangadhar (1798-1885 A.D.) has any occasion to dispute or comment on the doctrine of *tridosa*. It is curious, however, that this great doctrine has never been dealt with, as a whole, in any of the original *samhitas*, and neither any compiler nor any commentator have ever thought fit to compile all materials, scattered over a wide range of literature, in one place and to give a full position of the doctrine itself. It is only during the last 50 years different workers are found to interprete *tridosa* in different, of ten contradictory, ways. Many have attempted to explain the same in terms of modern science and that has made the preexisting confusion worse confounded. In fact, the proceedings of the Banaras *Tridosa churcha parisat* held in 1937 show the existance of no less than 55 different interpretations on the nature of the three *dosas* alone. The material shows interpretation differing as poles as under. It is a pity that no agreed conclusion has yet been reached on any aspect of the great doctrine, much to the inconvenience of the teachers, students and practitioners of ayurveda. It appears still more puzzling to one accustomed to think in light of modern medical science. The progress of ayurveda has undoubtedly been retarded to a great extent by this lack of proper knowledge on the doctrine of *tridosa*, the fundamental principles of ayurveda. It is thus of top-priority importance to settle, once for all, the different conflicting opinion on the interpretation of the *tridosa* doctrine.

The effect of this conflicting opinion on *tridosa* has made a distinct impression on the ayurvedic interpretation of medicine as has been done in the pages of this book. It appears from the different pages of this book that even the very vital and fundamental question whether the three *dosas* are material substance (*dravya*) or energy (*sakti*) has not yet been solved, although ayurvedic literature pointed asserts that they are material substances. It is a pity that the author has been compelled to be brief and concise.

This has placed the reader to a great disadvantage to follow the apparent contradictions in the different interpretation. This disadvantage has been converted into confusion in the minds of those trained to think in terms of modern science when they read the interpretation in terms of modern medical science. I hope the author, in the next edition, instead of being concise will give the interpretation in greater detail both in terms of *tridosa* as well in terms of modern medicine so that it becomes comprehensible to all concerned.

Explanation of ayurvedic doctrine in terms of modern medicine

Ayurveda originated at a remote period of world's history compared to with the modern medical science is but of yesterday. Yet though almost a child, the modern science has advanced to an unparalleled extent as that is based on direct observation and experimentation. Any modern doctrine can be scrutinised and corroborated by any person competent to do the experiments and observation. Ayurvedic doctrines on the other hand, cannot be corroborated at will as nowhere in ayurveda one finds any detailed explanation how the ancient sages came to these findings. This has been the greatest difficulty to the subsequent workers as we find very little evidence of the material which will show how these doctrines have been enunciated.

It is a fact that very many of these doctrines can be very adequately explained in terms of modern science. And as modern science is based on direct observation and experimentation those ayurvedic doctrines can at once be scrutinised and explained in terms of direct observation and experimentation. This is undoubtedly true to every aspect of *tridosa* doctrine, and it is astonishing to find the high grade of observation of the ancient sages and the marvellous accuracy of their findings when they are made to stand the scrutiny of experimental tests of modern science.

It is thus imperative that a painstaking attempt should be undertaken to collect all the existing ayurvedic literature, scattered in a widespread and haphazard way and correlate them together and explained, in the first instance, exclusively in the terms of the traditional and fundamental doctrines of ayurveda. If these fundamental doctrines can be explained in terms of modern science which I am confident will undoubtedly stand this scrutiny, the ayurvedic medicine can be interpreted without difficulty in either the traditional ayurvedic method as well as in terms of modern medicine. The more the modern medicine is used to explain the ayurvedic doctrine the better for the revival of ayurveda to its pristine glory.

From this point of view our best thanks go to the author of this book for taking this initiative. But his object of being concise and brief has led rather an opposite effect than becoming comprehensive. Let us take the instance of "symptoms of the disoders of *vayu*" as illustrated by conditions such as asthma, epilepsy, urticaria etc. (P. 16-17). What is meant by *prakopa* should, in the first instance, be thoroughly explained in terms of ayurveda and then in terms of modern language. Only to say that *prakopa* is weekness of *vayu* (P. 16) or activated or accelerated (*prakupita*) *agni* (P. 48) carries us nowhere.*

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*The subject has been dealt with in detail in the 7th Chapter of the book. —(Author)

Similarly the interpretation of asthma etc. has been done more in terms of modern science than that of ayurveda and that again in a rudimentary way. It will thus be of little appeal to the medical men trained in modern science, for whom this book is primarily intended. The best thing would have been to interpret all these conditions in terms of orthodox ayurvedic line of approach, and that is the first requirement, modern science to be used only to explain the ayurvedic terminology. The reorientation of ayurveda requires exposition of the texts in clear, concise and traditional ayurvedic terminology. Let not the essential purity of ayurveda be confused in an attempt to compromise in passing off as ayurvedic what is not ayurvedic at all.† It is right that the author has given adequate stress to the fact that ayurveda is centered round the *tridosa* doctrine and any attempt to elucidate the ayurvedic material in terms of this doctrine will be the true service to ayurveda.

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DR. D.N. BANERJEE

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† Since the tridhatus are more fundamental and vital than cells pathology of diseases can better be described in terms of the tridhatu theory than those of the cellular theory. Accordingly, an attempt has been made in this book to describe pathology of diseases in terms of the Vayu, Pitta and Kapha or tridoshas. —(Author)

CONTENTS

CHAPTER I

THE FIRST PRINCIPLES OF AYURVEDA

PAGE

The three Gunas Viz., Satwa, Rajas and Tamas. 1

The Panchbhutas. ... 2

CHAPTER II

THE VAAYU OR THE ELEMENT OF VITALITY

The Physiological Vaayu. ... 8

Five kinds of Vaayu. 10

The causes of the disorder of Vaayu. 13

The diseases caused by the disorder of Vaayu : Asthma ; epilepsy ; Urticaria ; shock : asthenic fever ; Vatic dropsy ; Vatic anaemia ; low resistance ; obesity ; diabetes ; gout ; rheumatism : vatic gastro intestinal diseases ; vatic mental disorders ; degenerative symptoms ; vatic disorder in the nervous system, ductless glands and pulse : vatic ulcer ; neurotic temperament. 16-31

Treatment of the diseases of Vaayu :—Preventive and curative. 31-38

CHAPTER III

THE PITTA OR THE ELEMENT OF CATABOLISM

Physical and metabolic heat or Bhootagni and Dehagni 39-45

The temperament of Pitta 45

The causes that activate Pitta ... 46

The Diseases caused by the activated Pitta ; of the blood ; of the stomach and intestine ; of the lungs ; of the skin, acute inflammations 48-50

Treatment of the diseases of Pitta ... 51

CHAPTER IV

THE KAPHA OR THE ELEMENT OF ANABOLISM

Physiological Kapha and the temperament of Kapha 53

The causes of the diseases of Kapha ... 55

Diseases due to the derangement of Kapha : catarrhal inflammations of the respiratory organs ; of the elementary canal, of the skin, of the joints and fibrous tissues, of the heart, of the kidney, of the peritoneum, of the brain, of the circulatory system etc. ... 56-63

Treatment of the disorder of Kapha ... 63

Summary 65

CHAPTER V

Tridoshic Approach of Ayurveda ... 67-70

CHAPTER VI

Five kinds of the Vaayu, Pitta and Kapha defined 71-79

CHAPTER VII

Vridhi or susceptibility and Prakopa or Excitability of the Dhatus ... 80-87

CHAPTER VIII

The tridhatu theory reviewed ...

CHAPTER IX

The tridhatus in relation to Bacteria ... 95-96

INTRODUCTION.

In their quest to find out the ultimate physical causes that govern the behaviour of living organism, the seers of ancient India propounded the Tridhatu theory (three-element theory) in accordance with which the three vital elements namely the 'Vayu', 'Pitta' and 'Kapha' in their normal condition regulate all physiological activities and keep the body healthy. On the contrary, when these 'dhatus' become abnormal or when their mutual harmony is disturbed (in which role they are called tridoshas) they bring about ill health and disease.

As to the soundness of the theory, one has to admit that besides the laws known to the sciences of Physics and Chemistry, there are other laws peculiar to the living organism, called 'vital laws' that are at work in the living machine, and without accepting which the work of the body cannot be accounted for fully and adequately. Ayurveda fills up this void and complements the science of physiology by stating that it is due to the three vital elements namely the vital energy (Vayu), the vital fire (Pitta), and the vital element of growth (Kapha), that the living organism behaves differently from the inorganic world and shows the three characteristic properties of automobility, assimilation and growth. Though these elements or vital forces, being primordial substances, do not belong to the realm of science yet the more closely one studies the living matter, the more compelled one feels to admit their existence ; for, undoubtedly, they appear to be operating in the body, inasmuch as they sometimes modify and even neutralise the known laws of physics and chemistry.

If somehow, the Western System of medicine, without neglecting its scientific basis, could be incorporated in the framework of the three element theory, on the one hand the former would be made more complete and on the other it would be Indianised or brought in line with and adjusted to the Indian mind which from time immemorial (Rigaveda 1-35-5 and Atharva Veda 1-12) has throughout been thinking about life, in terms of the three-element theory.

Ayurveda differs from the Western System of medicine in its method of approach to the medical problems which it views and interprets in terms of the three-element theory and thus, while considering the etiology and treatment of diseases, it gives more attention to the disorders of the elements or the intrinsic factors of the body than to the extrinsic ones.

Here in the following pages, an attempt will be made to state briefly the Ayurvedic method of interpreting the medical facts for the sake of those who have been initiated in the Western System of medicine and who wish to be enlightened as to the principles of Ayurveda.

CHAPTER I.

The First Principles of Ayurveda

1. *The Three Gunas* viz, Satwa, Rajas and Tamas

Ayurveda believes in Sankhya philosophy which holds that the whole universe, animate and inanimate, is evolved from the three gunas 'Satwa', 'Rajas', and 'Tamas' that are called 'Gunas' or qualities though they are regarded to be substantive entities. They are postulated to represent light, energy and inertia respectively. The state in which they are in mutual equilibrium is called 'Prakriti', while the state in which their equilibrium is disturbed is called 'Vikriti'. Thus the three gunas are said to be the ultimate material causes of all creation.

In the domain of Psychology especially, the mental phenomena, being far more subtle than the physical ones, are explained in the light of the theory of three gunas. Mind is believed to be born of the three gunas. Hence human beings are classified in three categories as 'Satvic', 'Rajasic' and 'Tamasic' according as the predominance of one or the other of these gunas in them.

A man with the predominance of 'Satva' in his nature is said to possess such qualities as self-realisation (Jnan) intelligence, wisdom (Medha), self-control (dhriti) memory (Smriti), unattachment, truth, violence, forbearance, charity, friendliness (maitri) sympathy, freedom from greed (Aparigraha), freedom from hatred (Adwesha), love, penance (tap), fearlessness, bravery, contentment, cleanliness, living faith in God, etc. He is more or less intuitively gifted with the faculty of right perception (Yathartha darshi) and right conduct (Yatharthakari) and therefore is competent enough to discern right from wrong. As such he is held by others as trustworthy or infallible (apta).

A man with the 'Rajasic' mind has the following qualities in him—lust, passion, avarice, jealousy, hatred, arrogance, hypocricy, ferocity, cruelty, impatience, greed, indulgence in sensual pleasures, etc., all leading him to foolish or feverish activities.

A man with the 'Tamasic' mind has such qualities as ignorance, lack of intelligence, inertia, idleness, stupor, want of faith in God, worry and anxiety and thus he is more or less dominated by ignorance, indolence and stupidity.

It is clear from the above that so long as the three 'gunas' act hand in hand in harmony with one another, the mind is said to be in the normal state. On the other hand, the person in whom prudence or wisdom is overcome either by restlessness or inertia, is said to be in an abnormal state of mind. As a result, it is the preponderance of 'Rajas' or 'Tamas' that brings about mental abnormality. Hence the treatment for mental abnormality consists in employing all methods capable of restoring 'Satva' to its normal position and of infusing the qualities of self-realization, self control, faith and happiness into the patient, so that 'Rajas' or 'Tamas' whichever has exceeded its limit may be brought back to its normal state.

2. Panch Bhutas.

Ayurveda believes that every physical being animate or inanimate, is evolved from five elements namely earth

(Prithvi), water (Ap), fire (Agni), air (Vayu) and ether (Akash). This body of ours also is a product of these five elements and is said to be a temporary abode of the soul whose main object is to act in such a manner as to attain freedom from sin and sorrow. After the departure of the soul the body is reduced to those elements from which it arose. These five elements are called 'Panch Bhutas'.

As regards their nature, 'Akash' means space that all-pervasive element which propagates sound. It is regarded as one of the subtlest substances and is considered to be the manifestation of 'Satva' of prakriti.

The first principle or force that evolves from space, in the course of evolution, is 'Vayu' or velocity (Akashat vayuh, chhandogya) the kinetic or dynamic element which forms the principle of electricity or the creative force in the whole universe. This principle is called 'Vayu' and the word derived from 'Va' meaning motion and is supposed to be the manifestation of 'Rajas' of 'Prakriti'.

In the course of evolution, heat results as a natural consequence of motion or rather heat is only another form of motion ('Vayoragnih'). There can be no productive or destructive change without the element of heat which is present in every being in its latent or patent form (Agnirayatheko Bhuvanam Pravishtah', Kath). This element of heat is supposed to be the manifestation of 'Rajas' and 'Satva' of 'Prakriti'.

As evolution proceeds, heat is followed by liquidity ('Agnerapah', cha) because when molecules of matter which were apart from one another and were revolving with great speed up till now, come closer and closer together owing to the diminution in their velocity, liquidity must result.

Liquidity which is called 'ap' or water element and owing to some stability having taken place in it is considered to be the manifestation of Satva' and 'Tamas' of 'Prakirti'.

In the evolution of matter the molecules come still closer together and at last assume solidity. This solidity or compactness is called earth or Prithvi, in Ayurveda (Sanghatvati Prithvi) and because this element of solidity signifies still more diminution in the velocity of molecules it is supposed to be a derivation of 'Tamas' of 'Prakriti'.

Thus space (Akash), energy (Vayu), heat (Agni), liquidity (Ap) and solidity (Prithvi) are supposed to be the material causes of the whole creation. The visible earth, water, fire and air are no exception to this rule and according to the preponderance of the respective elements in them they are named earth, water, fire etc.

THE UNIVERSE IS FORMED OUT OF PANCH BHUTAS :

Just as all activity in the physical world is the result of the element of 'vayu', in the same way all impulse and animation seen in animal life are traced to the same element, though in respect to the body, it is called physiological 'vayu'.

Just as the element of heat or 'agni' is the root cause of all chemical changes taking place in the physical world, in the same way, all the bio-chemical changes occurring in the animal body are supposed to be caused by the internal or physiological 'Agni'. Since this 'Agni' causes temperature (Tap) it is named as 'Pitta' (from tap or heat).

In the physical world the element of Liquidity (Ap) and the element of solidity (Prithvi) are the sole factors that govern the process of growth. These elements of 'Ap' and 'Prithvi' play a similar role in the animal body also and thus they together constitute a growth promoting element called 'shleshma', a word derived from 'Shlish' meaning that which causes cohesion. It is also called 'Kapha' the word which is derived from 'Riph' meaning that which builds.

It is clear from the above that according to Ayurvedic conception of matter, it is these five elements that govern all physical and physiological phenomena and in relation to the latter they are named 'Vat' or physiological energy 'Pitta' or physiological fire and 'Kapha' or physiological water. The difference lies in nomenclature only and not in substance. While considering Physical phenomena, they are called 'Panch Bhutas' and in the study of physiological function they are described as three 'Dhatus' meaning the three elements of the body.

Ayurveda believes that in the composition of all substances all of the five elements take part. To find out which of the elements is predominantly present in a certain substance, the substance under consideration is administered to the human body and its effects on the tissues and on the functioning of the body are noted. For instance, if by the use of a certain substance such effects as those of heaviness (guruta), bulkiness or obesity (sthulata), compactness (sandrata), firmness (sthirata), strength (sarishtata), growth(vridhi), regeneration or reproduction (utpatti) etc., are produced, then the predominance of the Earth element (Prithvi) in it is inferred.

If by the use of a certain article of food or medicine are produced in the tissues such symptoms as those of fluidity (Dravata), greasiness (Snigdhata), viscidity or softness (mriduta), wetness (klinnata) coldness (shitalta) slowness in digestive activities (mandata), then it is regarded as 'aapya" or mainly consisting of the element of water.

If a certain substance when administered activates the processes of digestion, oxidation, excretion, circulation, inflammation taking place in the body, or stimulates the process of metabolism in general and thus generates heat, consumes the tissues of the body in excess, then the substance is supposed to have the predominance of 'Agni' or heat in it. The effects of such a substance are quite opposite to those of the substance having the predominance of Water element in it.

If the use of a substance is constantly followed by such symptoms in the tissues as fibrosis (Rukhsata), degeneration (kshinata), atrophy (Laghuta), calcification or hardness (Kharata), over-sensitivity, infirmity, excitability (Chalata or Asthirata), then the substance is believed to possess the element of 'Vayu' in excess.

Such substances as produce porosity and other signs of decay in the tissues are supposed to have the predominance of 'Akash' element in them.

In this way the actions of all medicines and articles of food are studied on the living body and are explained in the light of the theory of 'Panch Bhutas'.

The particular taste or 'Rasa' also guides to some extent in finding out the effect of a certain substance on the body. As a general rule the substances sweet in taste are supposed to have the predominance of earth (Prithvi) and water (Ap) elements, and consequently have nourishing effect (Kaph karak) on the body.

Common salt and the substances with pungent and acidic taste have predominance of the element of 'Agni' and thus they help in stimulating the catabolic activity (Pitta) of the body.

The substances bitter astringent or pungent in taste in general have the excess of 'Vayu' element in them and hence when used constantly produce the sign of degeneration and decay in the tissues.

Common salt and organic acids produce excess of fluidity and oedemie condition in the tissues and hence they are said to increase 'Kapha'.

CHAPTER II

The Vayu or the Element of Vitality

PHYSIOLOGICAL VAYU (VAAT-DHAṬU)

Charak says, ("Sarva tantranam vidhata Vayureva Bhagvaan") that it is 'Vayu' 'that creats all substances of the universe.' 'Brihdaaranyak' holds ('Vayuna veigoutam sutren sarvani bhutani sandribdhani bhavanti 3/7') that 'it is the thread of 'Vayu' that runs through and holds the whole creation.' Thus according to Indian Philosophy it is the element of 'Vayu' that is the cause of the creation, sustenance and destruction of all substances in the universe.

The same element of 'Vayu' is supposed to be the cause of the life of all animal and vegetable world, though it is named physiological 'Vayu'. Ayurveda believes that the life of even the minutest cell depends upon the presence of 'Vayu' in it. As long as this 'Vayu' remains in normal condition the cell leads a healthy life and does its work properly, but as soon as this 'Vayu' gets impaired the cell begins to decay. Hence Charaka says, ('Sa Pranah Praninam smritah') that this 'Vayu' is the very life of living-beings. This 'Vayu' is generally named vitality or vital energy.

This vital-energy is so apparent that it cannot but arrest our attention by its presence when we examine a living body. It is the property of activity that is the main characteristic of a living body, distinguishing it from the inorganic world. Each and every cell of the body seems to be engaged in some sort of activity specifically assigned to it, some of the cells are assimilating the food juice 'Chyle,' some excreting the effete materials, some producing juices, while others are engaged in a variety of other functions. The cells and tissues of the body perform not only their specific functions but also fully co-operate with the adjoining or related cells and tissues in carrying out their task. It appears as if the parts of the body were as alive as the whole. It is the driving power of this 'Vayu' present in them that activates and animates them in this way.

According to the maxim that life begets life the origin of this vital energy lies in the originating cells of the body the ovum and spermatozoon. With the multiplication and specification of the cells and tissues the same vitality is transmitted to the new cells and tissues. Proper food, water, temperature and proper amount of oxygen serve to preserve and maintain it. Lack of them or production or introduction of any poisonous matter in the body causes its death.

The bodily organs are working under various known laws physical and chemical, but the supreme force of the body is its undefinable yet undeniable vital activity on which all other laws appear to be dependent. When, some how, it is interfered with, all other known laws become null and void. Each and every organ of the body is inherently endowed with it. For instance, heart and blood vessels continue to carry out their work of circulation of blood, even if they are freed from all nervous connection, provided their vitality is not interfered with. In the same way the mucous membrane of the alimentary canal seems to be naturally endowed with the capacity of absorption of food juices, since absorption comes to a standstill if the epithelium of the intestines is damaged or removed. In the same way the peristaltic activity of the intestine which forces the contents gradually onward, is a natural force of the intestinal musculature, being independent of the nervous system. The epithelial layer of the urinary tubules of the kidney exercises a selective action in separating urea, uric acid, pigment etc., from the blood. In the case of white blood carpuscles their power of ingesting and digesting foreign particles (called phagocytosis) is also an example of a specific vital energy present in them. Similarly the ciliary-movement of the ciliated cells situated in the alimentary canal, respiratory passages, etc., also is quite independent of all nervous influences. The cycle of cantraction and relaxation regularly taking place in the diaphragm, carrying on the function of respiration, also is a specific vital energy naturally present in that muscle.

The net-work of nerves connected with these organs serves to regulate and control their functions, to speed up or slow them down according to the requirements of the moment. Thus various other actions and movements are taking place in the body which appear to be independent of the nervous system.

In accordance with the difference in functions and regions the 'physiological Vayu' has been given different names as 'Praan', 'Udaan,' 'Apaan', 'Vyaan' etc.

PRAAN VAAYU

The power of cerebrum or cerebral vitality that (i) receives the sensations of smell, sound, taste, touch, and vision and acts through the cranial nerves ; (ii) governs all mental activities ; and (iii) carries out the functions of inspiration and deglutition, is called Praan Vaayu. The word 'praan' is derived from the root 'pra' and 'ana'—meaning that which draws in or takes in.

UDAAN VAAYU

There is another kind of energy residing in the thorax, larynx, and the upper parts of the pelvis, which is called into play when one speaks or makes any sort of physical activity requiring effort and strength. It is that energy which causes contraction of the thoracic and abdominal muscles, thereby forces the air out through the vocal cords of the larynx, and is the main instrument in producing sound and all kinds of physical exertion. This Vayu being an expiratory force is called 'Uddan' or that which causes forced expiration.

SAMAAN VAAYU

There is yet another kind of energy peculiar to the living cells and tissues that renders the food material, first suitable for absorption and then assimilates it. This is called 'Samaan Vaayu' ('Sam' 'Ana', to absorb in). This power of absorption is much more manifestly present in the middle part of the alimentary canal which absorbs enormous quantity of food—juices daily. Hence this part is considered to be the main seat of 'Samaan Vaayu'. The small intestine with its extensively spread epithelium and Villi is naturally endowed with the property of absorption which is independent of all nervous influence, sympathetic or parasympathetic. When this energy gets diminished part of the food remains unabsorbed.

APAAN VAAYU

In the act of defæcation, micturition, menstruation, parturition, ejaculation etc., we come across different kinds of expulsive movements present in the rectum, bladder, uterus, and seminal vesicles respectively. Defæcation is nothing but a powerful expulsive action taking place in the lower part of the colon to evacuate the fæces. This function shows the intrinsic or inherent tone of the rectum. In the same way the act of micturition also consists of the relaxation of the external sphynctors and expulsive contraction of the bladder. This act also depends on the tone of the bladder. This contractile tone with which different excretory organs force their contents out is called 'Apaan Vaayu' ('Ap' 'Ana'). This tone also seems to be independent of the nervous system, though it is augmented or inhibited or kept under control by different sets of nerves, as those of the parasympathetic and sympathetic. With the diminution of this energy the rectum, bladder, etc., become weak and irritable.

VYAAN VAAYU

This, innate capacity of movement present in the voluntary and involuntary muscles characterised by contraction and bringing about all movements of the body is called 'Vyaan Vaayu' ('Vi'—many 'Ana'—to bring). It not only manifests itself in the skeletal or voluntary movements but in the involuntary movements also as those of the blood vessels, lymphatics and other ducts in conducting their contents and in such involuntary acts as those of closing and opening of the eyelids.

Though vital energy is the characteristic of all living cells, yet the groups of cells in which this factor is predominantly present, as those of the Duct-less glands and Vitamin-producing parts of the animals and vegetables, are especially and advantageously administered to those who are wanting in normal vital energy and thus various parts of the vegetables and animals are used to replenish the lost or reduced energy of the human body.

THE CAUSES OF THE DISORDER OF 'VAAYU'

"What is that which sustains life", asked the disciple. "It is food that sustains it", was the reply. "Pranasya ka gati riti annamiti hovach. chh." In fact, food particularly those articles of food which possess the elements of earth and water in excess contribute to the maintenance and growth of vital activity. Such substances are generally sweet to taste, hence all sweet and nourishing foods help in the preservation of 'Vaayu'. In the same way all other factors which increase the elements of earth and water in the body, as those of physical rest, sleep, mental peace, etc., help to preserve life. Contrary to this the intake of the articles of food which are poor in respect of these two elements and consequently are not nourishing and are bitter, pungent or astringent to taste, results in the reduction of this energy and consequently degeneration takes place in the tissues.

In addition to these foods of poor quality the excessive or continuous exposure to cold also has an adverse effect on the energy. Hence people inhabiting dry and hot region possess on an average more energy (vitality) than those living in wet and cold countries. In this connection it may be worth while to remember that foods and drinks of hot quality stimulate this energy while all cooling foods and drinks reduce it.

Besides, this innate energy of the body is reduced by all debilitating factors such as excessive purgation, vomiting, perspiration, douching, walking, physical exercise, bleeding, venery, studying, overwork, and want of sleep, etc.

In the same way severe physical injuries as well as shocks caused by such factors as the loss of property, or by the bereavement of dear and near ones or by the failure in worldly affairs and love matters tend to weaken the vitality. Hence mental abnormalities are rife among neurotics and psychotics.

Age is a great factor in determining the sufficiency or otherwise of this energy. It declines as the age advances, so much so that the advanced age becomes a great etiological factor in the causation of the disorder of 'Vaayu', Perhaps it is the decrease in this energy that initiates decay and brings about old age. Hence premature old age can be prevented if measures to preserve vitality are adopted.

It is true that out of six seasons of the year it is during the summer that this energy naturally gets exhausted. But when the rainy season sets in and cold and humid winds begin to blow the energy gets weakened still more. Hence the diseases caused by the derangement of 'Vaayu' are common in the rainy season.

In the day to day life of a man, it is in the later part of the day, after day's labour that his Vital energy reaches its lowest point. At this time infirmities become more manifest. But the relaxation and rest provided by sleep at night recoup the loss. Again it is in the small hours of the night when considerable time is taken up by the last meal and at the setting of the sun which is the source of all energy, that man's vitality again becomes very low. The diseases caused by the loss of this energy and even deaths occur more commonly during these hours.

Some people are constitutionally weak and wanting in this energy from their birth and hence are described as having the temperament of 'Vaayu' or they are called neurotics. They are not adequately equipped to resist physical or mental shocks, worries, anxieties, cold, heat, diseases and the like. They are much more pre-disposed to the diseases caused by the derangement of 'Vaayu'.

The greatest factor that robs the body of its vitality is poison. Those who get addicted to alcohol, opium, tobacco, and other narcotic drugs lose their vitality prematurely and become victims of degenerative changes. Such bacterial poisons as those of chronic syphillis, chronic dysentery, chronic malaria, chronic inflammation or suppuration not only undermine this energy but in addition to it sometimes precipitate a serious disorder of 'Vaayu' in the most susceptible part of the body.

Those who are deficient in the innate energy of the body, are naturally predisposed to indigestion, constipation, and defective metabolism with the result that they are likely to accumulate the malproducts in their blood. These substances being the result of incomplete digestion are called in Ayurveda as 'Aamas' or metabolites. Thus various acidic substances resulting from starch or fat-indigestion causing acidosis or some nitrogenous or histamine-like substance resulting from the imperfect digestion of some unaccustomed protien foods otherwsie called 'Aama' get absorbed into the blood stream. They go a long way in lowering the vitality of the susceptible part of the body and giving rise to various disorders of 'Vaayu'.

Besides, various toxic substances are produced in the alimentary canal as the result of dyspepsia, diarrhoea and constipation. So long as the vitality of the body remains intact, they are got rid of through fæces, urine, sweat, breath, etc. But with the advancing age when the vitality is naturally on the decline and the excretory organs grow weak they start accumulating in the blood. If the depurating functions of the body as those of purgation, vomiting, douching, snuffing, perspiring, etc., are not regularly attended to according to the injunctions of 'Shastras' regarding personal hygiene these are apt to play havoc on the arterial walls or nerves or other tender parts of the body and destroy their vitality.

SYMPTOMS OF THE DISORDER OF VAAYU

So long as the 'Vaayu' or vital energy of the body remains in its normal state, simple infections or slight accumulation of the 'Doshas' remains ineffective and thus a very large part of humanity escapes unhurt by the ravages of disease and epidemics.

On the other hand, when the innate energy of 'Vaayu' grows weak one becomes an easy prey to the poisons, both bacterial and metabolic. Mostly it is not the virulence or largeness of the quantity of the toxins that leads to disease and death, but it is the loss of vitality that makes one susceptible to their adverse effect. According to Ayurvedic conception in bringing about different paralytic troubles, foot-drop, wrist-drop, etc ; it is the loss or weakness of the fundamental energy that plays a more important part than the concomitant poisons generally believed to be the causative factors. Much more emphasis is laid in Ayurveda on the means of preservation of 'Vaayu than on the avoidance of toxins and bacteria.

Regarding the etiology of disorders of 'Vaayu' or 'Vaayu Rogas' the general principle is that when Vayu or innate energy of an organ grows weak, it, instead of withstanding reacts violently against the ill-effects of the invading poisons. This reaction or 'Prakopa' may be in the form of some abnormal movement or sensation.

ASTHMA (SHWAS ROGA)

For instance, when the weakness of Vaayu lies, specially in the bronchial tubes, they react violently and enter into a state of spasm whenever a poison to which the tubes have grown sensitive gets into circulation, or whenever there is some irritation in the nose or stomach acting reflexly on them. Thus it is the 'Prakopa' of 'Vayu' that sets up a fit of spasm in the tubes. During the fit, calibre of the tubes remains constricted. Hence dyspnœa or difficulty in expiration resulting in an attack of asthma sets in. This 'Prakopa' of Vaayu serves the body inasmuch as it, being a violent reaction, oxidises the poison speedily and thus brings about the end of the attack.

EPILEPSY—(APASMAR)—

In the same way, when the vitality or 'Vayu' normally present in the vessels of the brain has grown weak, the vessels react violently, whenever an abnormal dose of some metabolite enters into the circulation and thus a state of spasm of constriction is set up in them, leading to more or less complete anæmia of the brain. This brings about an attack of unconsciousness attended with convulsions, otherwise called a fit of Epilepsy. This 'Prakop' of 'Vaayu' serves the body inasmuch as the violent convulsions expedite the oxidation of the poisonous substances and bring the spasm to an end.

URTICARIA (SHITA PITTA)

When the weakness of the Vayu, inborn or acquired is present in the skin, the Vasomotor power or tone of the cutaneous vessels is below par, accordingly under the influence of poisons, metabolic or bacterial local dilatation takes place in them leading to flusing and swelling of the adjacent skin. These white swellings are called urticarial rashes and indicate the want of tone in the cutaneous vessels.

SHOCK (ANGA SHETYA)

If there is general weakness in the blood vessels, sometimes under the influence of some poison or some mental or physical injury or heat or exhaustion, a sudden but transient failure of tone and blood pressure takes place in the circulatory system. It brings about the condition called shock or collapse leading to prostration and transient loss of consciousness called syncope. This is due to asthenia or extreme debility of Vaayu (Hinavaayu.) But soon the Vaayu of the blood-vessels reacts and this transient attack of coldness is followed by slight pyrexia.

ASTHENIC FEVER (VATIC FEVER)

The Vaayu or tone of the blood-vessels has a specific capacity to resist changes of external temperature and to regulate it by constricting the cutaneous vessels in the cold environment and by dilating them in the hot surroundings, so that loss of heat decreases in cold and increases in hot atmosphere, automatically. Owing to weakness of 'Vaayu' when this vasomotor power becomes weak, it reacts intensely against cold making the extermities pale and blood less, or dilates the cutaneous vessels too much in summer so that hands and feet become hot. In old age or in persons who are deficient in the innate energy of Vaayu this mechanism of heat regulation sometimes fails so that the temperature of the body is raised when it is exposed to severe heat, and similarly the temperature is lowered when it is exposed to severe cold, rendering the body liable to infection of Cold, Pneumonia etc. This type of fever that is caused by the weakness of heat-regulation-power is called 'Vatic' fever' a fever caused by the derangement of 'Vaayu'.

DROPSY DUE TO DISORDERED VAYU (VATIC DROPSY)

When from malnutrition or from the continuous ill-effect of the poison circulating in the blood, the vessels undergo a certain amount of degeneration or their endothelium gets damaged they become more permeable and exude more lymph into the tissues ; creating the condition called dropsy. This type of drospy caused by the degenerative changes or defective vasomotor system in the blood vessels is called in 'Ayurveda' the dropsy caused by the derangement of 'Vaayu'.

ANÆMIA DUE TO DISORDERED VAYU (VATIC ANÆMIA)

When erythropoiesis or the normal process of the formation or regeneration of the red-blood-cells is depressed from malnutrition or deficient diet, or premature old age, or from degenerative, or atrophic changes taking place in the stomach, liver, intestines and bonemarrow as happens under the long continued effect of various poisons, the resultant bloodlessness is called in 'Ayurveda' as the anæmia caused by the derangement of Vaayu.

LOWERED RESISTANCE (OJAS KSHAYA)

When the bodily resisting power, particularly exhibited by the phagocytic leucocytes or by the fixed endothelial cells of the hepatic capillaries, spleenic sinuses etc., or by the bodily fluids in the form of their bactericidal substance or antibodies or antitoxins against the harmful effects of the invading bacteria or toxins becomes enfeebled from over exercise, worry, loss of vital fluids, fear, mental shock, injury, deficient diet, the resulting condition is called in Ayurveda Ojas Kshaya and is believed to be brought about by such factors as reduce the vital energy of the body.

OBESITY (MEDO VRIDHI)

When the vitality of the tissues is lowered due to damage done to them by the poison arising from imperfect metabolism of carbohydrates or hydrocarbons, they become incompetent to utilise fats brought by lymph and blood, and thus free fat as such accumulates in the usual storage areas as well as in unusual places. The condition is called obesity and according to 'Ayurveda' is brought about by the derangement of 'Vayu'. When lowering of vitality exceeds normal limits oxidation or utilisation of fats decreases in the blood and it appears in the urine also causing the disease 'Vasameha' or Ketonuria or lipuria.

DIABETES (MADHUMEHA)

The bodily tissues when full of vitality are capable of storing sugar as glycogen and to convert and utilise it as glucose during muscular work. But sometimes when the vitality of the tissues is congenitally weak or is weakened under the effect of some metabolic poison, this capability of utilising carbohydrates is reduced, with the result that hyperglyceamic glycosuria follows. In this condition when already the vitality of the tissues is below normal thay are rendered susceptible to pyococcal infection and other forms of injuries, and resulting ulcers and boils are called 'Vata Vranas' or 'Vata Pidikaas' or ulcers and boils caused by the derangement of Vaayu.

GOUT :—(VAAT RAKTA)

So long as the tissues are endowed with the natural vitality they are capable of transforming the food materials and absorbing them into their own substances. When due to old age, exhaustion, worry, mental or physical fatigue or chill, this vitality gets impaired they are rendered incapable of fulfilling this task. Thus in case the nitrogenous or purin-containing foods are taken in excess, they are neither properly metabolised nor are they fully utilised in the body with the result that uric acid and acid-sodium-urate are produced in excess, and when blood is surcharged with them they are deposited in the articular cartilages, ligaments of joints, tendons etc., in the form of acid-sodium-urate. This gouty condition is brought about by the lowering of the vitality of the tissues or derangement of Vaayu hence in 'Ayurveda', is called 'Vaat-Rakta', meaning the disease in which blood gets vitiated on account of the feebleness of the tissues.

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RHEUMATISM :—(AAMA-VAAT)

When the vitality of tissues is already impaired and the rich carbohydrate foods made of sugar and fat are over-eaten, they are not properly transformed and utilised in the body with the result that some products of impaired metabolism and of acidic nature get accumulated in the body. These metabolites 'Aama' in Ayurveda act as poison on the fibrous tissues and cause fibrositis or Rheumatism. This disease in 'Ayurveda' is called 'Aama-Vaat' meaning the derangement of Vaayu brought about by 'Aama' or metabolites which result from the lowering of the bodily vitality. These gouty and rheumatic pains can be eradicated if vitality of the body is increased and over-eating or dietatic errors are dispensed with.

श्री धर्मदत्त वैद्य संग्रह

DISEASES OF THE STOMACH DUE TO THE DERANGEMENT OF VAAYU

Persons whose vitality of the stomach is especially, lowered and hence said to have hyposthenic-gastric-diathesis are liable to develop some gastric disorders, attributed in 'Ayurveda' to the derangement of 'Vaayu'. Under condition of stress and strain or in great despondency caused by failure in wordly pursuits or love affairs or in other psychological difficulties such people lose their appetite altogether or become victims of anorexia-nervosa and suffer from nervous dyspepsia in which their digestion becomes extremely irregular, becoming very weak one day and comparatively well the next. In women with the hyposthenic-gastric-diathesis if the brain also is excitable they sometimes vomit under emotion of fear or disgust and this symptom of vomiting occurs again and again whenever something revives the memory of this incident which on some occasion caused it. Such a vomiting is called 'Manas' or hysterical vomiting.

THE DISEASES OF THE INTESTINE DUE TO THE DISORDER OF VAAYU :

INTESTINAL COLIC :—(VAAT SHOOLA)

When the tone of the stomach is congenitally low achlorhydria also is generally present. Consqeuently after meals the stomach remains dilated for a longer time than usual. Such persons cannot take food in excess, if they do so they suffer from slight pain or discomfort or distension lasting for sometime, immediately after meals. This slight dilatation of stomach is common in those who are asthenic by nature.

The want of tone in the intestines renders them irritable whenever some unsuitable food is taken or some irritative substance or gas is formed within. This gives rise to the exaggerated reflexes, which in turn, produce powerful spasm resulting in intestinal colic, (Vat Shool).

NERVOUS DIARRHŒA :—(VATAATISAR)

The natural neuromuscular tone of the intestines withstands all reflexes and shocks received by the nervous system. But when this tone falls, intestines become more excitable and their reflexes grow active. Hence under conditions of emotion, fright or nervousness some people evacuate formed stools frequently. This in 'Ayurveda' is called diarrhœa caused by Vayu-derangement (Vataatisara).

CONSTIPATION : (MAL BANDH)

In the same way, when the vaayu or natural tone of the rectum and lower part of the intestines is deficient, and in addition to it one neglects to respond to the call to defæcate, the reflexes on which the act of defæcation depends, grow weaker and weaker. In this condition fæces accumulate in the rectum and still the call to defæcate does not arise, with the result that the rectum gets dilated and its tone gets still weaker. This state when the vayu of the rectum is so incompetent that it cannot evacuate the bowels properly, is called constipation (Mal Bandh).

THE MENTAL DISEASES CAUSED BY THE DERANGEMENT OF VAYU

The cerebrum or cortex of the brain has a certain capacity that keeps under control all lower centres and all bodily movements, sensations, reflexes and emotions. The cerebrum is not only the seat of cortical inhibitions or will power, but it is the organ of mind and is the seat of intelligence, judgement, memory, self-control, concentration, etc. When the innate energy or 'Vayu' of this organ is impaired from hereditary predisposition or from exhaustion or from organic decay the lower centres of the body are set free. Such a state makes one not only extremely excitable and emotional but predisposes one to various mental abnormalities.

Such a person exhibits no abnormalities, so long as the world goes on smoothly with him. But as soon as, some misfortune as that of some great disappointment in love or business, or shock of bereavement befalls him and conflict arises in his mind, between his ardent desire and reality, being weak-minded he can neither part with his desire nor face reality which is dismal and dark. Instead of resolving the conflict by thinking logically and taking to reality he transfers his desire to the level of the unconscious mind from where it continues to seek expression and influence the conscious mind. This desire accompanied by relative emotion is spoken of as a complex or 'Moha'. This, lying in the stratum of unconscious mind acts as a hidden rebellious element within the body.

INSANITY (UNMAAD)

The weaker the mind the more profound is the mischief done by it. In him who is extremely weak-minded this 'Moha' or complex assumes supreme power over the mind and he fancies that he has fully gratified his desire. Thus he becomes a subject to a delusion or phantasy formation. For instance, one who has lost his son and is utterly unfit to face reality begins to believe that his son is alive and thus he develops a phantasy under which he lives exhilarantly, and his desire or 'Putra Moha' attains an imaginary fulfilment. This state in which 'Moha' becomes uppermost and completely overpowers judgement is called insanity which in Ayurveda is called 'Un-Maad' meaning that an emotion 'Mad' or excitement coming up (Ut).

HYSTERIA (APTANTRAK)

In those whose cortical inhibition or controlling power is weak to a lesser degree, the complex or 'Moha' dissociates itself from the consciousness, begins functioning independently, and assumes a transient control over the personality. So long as the patient is under the influence of his 'Moha' he commits such acts as he takes no cognizance of. Some times this assuming of power of the 'Moha' over the body is partial so that an organ of the body as an eye, larynx, ear or limbs or a visceral organ stops functioning. This disease commonly called 'Hysteria' in Ayurveda is called "Aptantraka" meaning a disease in which the brain loses its rule (tantra) over the body or gets dethroned as long as Vayu of the brain remains deranged (Hridi-mukte narah swastyam yati moham vrite punah. ch)

PSYCHASTHENIA (ATATWABHINIVESH)

When the mind is not so very weak, but weaker than the average, an idea or desire becomes turbulent and recurs to it again and again in defiance of its authority. Mostly this idea or 'Moha' is quite illusionary and a product of imagination but to the patient it appears real. This idea has partly dissociated itself from the whole consciousness, and is inaccessible to reasoning on the part of a doctor. Thus, for instance, an idea gets into the mind of the patient that he is suffering from sexual-impotence or tuberculosis whereas he has none of the diseases. This in Ayurveda is called 'Atatwa,' but the patient still insists on and unshakably believes in it.

If such a person becomes a victim of a mental conflict in which he cannot rid himself of the desire for one who has deserted him or something which has irrevocably been lost the memory of that subject becomes extremely painful and disquitening to him. In order to attain peace of mind he tries hard to forget the episode. But he cannot banish it, he succeeds only in repressing it to the unconscious mind. All memories, which cause pain or remorse or shame or fright are dealt with in this way. But this repressed 'Moha' or complex still remains in the lower layer of mind and always tries to rise to the surface of the conscious mind indirectly and to cause pain or remorse or shame which is repugnant to personality. Therefore the patient devises various methods to defend himself from this offending idea. Because he does not like the idea that the 'Moha' in question is a part of himself so he attributes it unconsciously to some body or some thing else, that has been associated in the genesis of this 'Moha,' avoiding that person or object with the same force as he used to repress his 'Moha'. Thus the morbid habits of blaming, rebuking and fault-finding arise.

A psychoneurotic suffering from the indirect effects of his repressed 'Moha' makes himself believe that somebody else or something else is to be blamed for all his ills, or the defective functioning of an organ, or a disease real or imaginary, is at fault with him.

This Psychoneurosis is called 'Atatwabhinivesh' in Ayurveda meaning the disease in which one lives in an unreal and illogical state, and the disease is attributed, mainly, to the derangement of 'Vayu'.

ALL DEGENERATIVE DISEASES ARE BROUGHT ABOUT BY THE DISORDERED VAYU

When from hereditary predisposition or from acquired causes the resisting power of the whole body or particular organ of the body is impaired it becomes more susceptible to the injurious effects of the poisons circulating in the blood. It therefore gets damaged or degenerated prematurely. Devitalisation of a tissue under the influence of a poison is followed by degenerative changes. Degenerated organ when observed looks slightly greyish in colour and hard and coarse in structure. Greyish tinge is probably produced by the turning of the iron contained in hœmoglobin of the blood into iron sulphide and hardness is caused by the depositing of the calcium phosphate and carbonate and coarseness is produced by the diminution of the parenchymatous or cellular part of the tissue. In this .state of tissue when its vitality is lowered and retrogressive changes are taking place in it, and when its capacity to excrete waste products is also below par, its power of assimilating food material from the blood is diminished, its formation or building up is retarded and consequently it becomes small or atrophied. According to Ayurveda the organs which are subjected to the 'Prakopa' of Vayu turn grey (Krishna) in colour and become fibrosed or coarse (Ruksha) hard or calcified (Khar) and small or atrophied (Laghu).

Such degenerative changes may occur in any tissue of the body as in the skin in the walls of the blood vessels and heart and the kidneys, liver etc. All these diseases in Ayurveda are described as the diseases caused by the derangement of Vayu.

'VAYU-PRAKOPA' IN NERVOUS SYSTEM

In case the central nervous system comprising the brain spinal cord, and peripheral nerves as a whole or a particular part thereof, has got its vitality impaired and hence is more vulnerable to poisons bacterial or metabolic, it soon begins to manifest signs of overexcitability or heightening of its function, or the nervous system may have a comparatively shorter period of vitality after which it becomes an easy prey to ordinary poisons and thus begins to decay prematurely. In case the sensory tracts are affected such symptoms as pain (Shool), numbness, anaesthesia (Supti), ataxy (Khanjata), arise. If motor tracts are implicated such abnormalities of movement as those of tonic or clonic spasm (Stambh,) convulsion (Aakshep), tremors, twitchings (Kamp), tics (Chalan), paralysis (ghaat) result. If nervous tracts concerned with the perception of light, sound, taste. smell and touch, are affected with degenerative changes various diseases as those of anosmia (Gandh-Naash), optic atrophy (Timir) or tinnitus (Karnghosha) vertigo (Bhram) loss of taste (Arasajnata) follow. When motor tracts in connection with the sense organs are involved many varieties of deficiency in their movements such as paralysis of occular muscles, facial paralysis (Ardit), paralysis of the tongue etc. result.

'VAYUROGAS' OF THE DUCTLESS GLANDS

Impairment of vitality takes place in the ductless glands, as well. Amongst them, when the natural immunity of the thyorid gland is weak and consequently it is affected by some invading toxin, metabolic deficiency leading to congenital non-development in the body and mind (cretinism or vaamanta) or the general weakness and lethargy, (Myxoedema) results. When the pituitary gland undergoes degenerative or atrophic changes the growth of the body becomes abnormal with the result that either it grows too big or remains too small (Atidirghtaa—Atihraswataa). When the suprarenal gland becomes susceptible to poisons and gets atrophied or degenerated a progressive general weakness (Addison's disease or Krishtaa) results.

DERANGEMENT OF VAYU IN THE GONADS

When the sex-glands, testis or ovary, fail to develop properly or the span of their vitality is short and thus become the subject of degenerative changes under the influence of toxic substances, disease such as infantilism, impotence, premature sexual weakness, are observed in males, and amenorrhoea (Aartav naash) and habitual abortion follow in females. Early degenerative changes in them lead to a series of changes similar to those which follow the menopause. Of them the most obvious are unproportionate deposition of fat, nervous irritability, recession or regression in the productive organs and in their activity.

THE PULSE WHEN VAYU IS DERANGED

When the tonicity and contractility normally possessed by the heart and arterial system are lowered, they give rise to a pulse wave, that is indicative of general weakness and therefore is called asthenic or 'Vatic' pulse. This kind of pulse is met with in association with the nervous or emotional states or with the degenerative diseases of the heart and blood-vessels. The force or impact of the pulse, that it makes against the finger, is feeble (Nirbal) and the rate of the beat is fast (drutaa) and rise or amplitude of the pulse is small (tanvi or laghvi). When, thus output of the blood and the force of the heart is less than normal and consequently the blood pressure is low, and in this state under the effect of emotion or fever the heart beats forcibly the rebound from the closed aortic valve becomes conspicuous. This renders the pulse more dicrotic (Sarpagati). In older patients if degenerative changes have set in the vessels, the bood pressure is raised and the pulse feels hard (Kathina). When the nutrition of the heart is interfered with owing to the degenerated condition of the coronary arteries the pulse is likely to become irregular (Vishamaa). All these symptoms are indicative of the asthenic or 'Vatic' pulse.

THE ULCER DUE TO THE DERANGEMENT OF VAYU

When the vitality or the resisting or reparative function of the body is depressed and the invading agent is intensely toxic the tissues involved undergo an extreme or mild variety of degeneration or death and the resulting ulcer is called a necrotic or Vatik Ulcer (Vran), whose edges, from want of proper nutrition and congestion of blood are indurated (Kathin) firm (stabdha) greyish brown or black in colour (Krishna) and owing to increased sensitivity are painful (Samvedanah). Such a necrotic Ulcer, in Ayurveda, is called a 'Vaat Vrana'.

ASTHENIC OR NEUROTIC TEMPERAMENT (VAAT PRAKRITI)

One is said to possess an asthenic or neurotic temperament when constitutionally the element of 'Vayu' is predominant over the elements of earth and water. Owing to lack of proper nutrition his skin and hair are thin and dry, (Ruksh) the organs are undeveloped and emaciated (Laghu), his body and mind are infirm (chal), the tissues are unduly harsh (Parusha) and his nervous system is irritable. He is so much excitable that small stimuli cause large responses in him. He loses control over himself and shows temper. Cold being depressent to vitality, cold weather, and diets and drinks of cooling nature are not agreeable to him. All such factors as tend to lower the vitality, as physical or mental overexertion, physical or mental shocks, overwork, want of sleep, abstinence from food and drink, worry, grief, etc., are inimical to him. Having this fundamental weakness in him he is ill-equipped to fulfil his objects in life and is much more liable to contract diseases incidental to the derangement of Vayu.

TREATMENT OF THE DISEASES OF VAYU

PREVENTIVE TREATMENT

A person born with 'Vatic' temperament should take care to live within the limits of his bodily capacity and to avoid all that tends to drain his body of its diminished vitality. He should be on his guard not to put stress and strain of over-work on his body and even to fall a victim to emotional excitement. One with low vitality is apt to form the habit of worrying and anxiety over trifles. This habit should be carefully guarded against. A habit of always remaining cheerful and contented and of keeping one's mental poise should be cultivated. By taking rest, recreation and sleep the lost energy is restored. Therefore one with low vitality is required to take enough of them after the day's labour is over. In addition enough of food that is light, nutritious, and easily assimilable should be taken. (Achintan, Harshan, Santarpan, Brinhan-Chikitsa.)

Though rest has an important place in the treatment of an asthenic or 'vatic' person, graduated and judiciously regulated physical exercise in the form of various 'Aasans', walking and massaging is of great value to increase the tone and energy of the body. In the same way though it is nutritious food that can increase his vitality, yet, since his digestive power too is weak in proportion to his general weakness, over-eating and indulging in heavy and bulky meals should be carefully avoided. They lead to indigestion, which in turn produces habitual constipation. This constipation is attended with auto-intoxication which reduces vitality and brings about various disorders of 'Vayu'.

Focal sepsis that is the pus in the tonsils or sinuses or in a dead tooth or in any part of the body in a person of 'vatic temperament' is likely to lower the vitality. When it is found it should be treated vigorously.

Metabolic toxins are liable to get accumulated in one who is of asthenic temperament. He should therefore be careful to purge his body of toxins by taking mild purgatives off and on. The use of such nutrients and tonics as cow's milk, butter, ghee, almond oil, or the powder of 'Shataavari' or 'Ashwagandha' or 'Haritaki' or 'Amalaki' or 'Madhuyashti' with ghee or the use of some medicated tonic 'ghrit' as 'Shataavari Ghrit' or 'Dashmulaadi Ghrit' in the morning helps in preserving vitality.

CURATIVE TREATMENT FOR THE DISEASES OF VAYU

Eliminative Treatment

(Shodhan Chikitsa)

The people of Vatic temperament having weak digestive power are liable to suffer from dyspepsia and the resultant mal-products working as poisons give rise to various disorders of Vayu. Hence indigestion should be looked for and treated. If the mal-products resulting from the indigestion of proteins are at fault, as they are in the patients of asthma and urticaria (vatic shwaas, vatic shitpitta) etc., the proteins in their food as milk, curd, pulses, meat etc., should be cut down. In case the carbohydrates and sugar disagree with the patient as they do in diabetes, obesity, flatulent dyspepsia, and sprue (madhumeha, medovridhi, vishtambhajirn, grahani rog) they should be cut down from the dietary of the patient. When it is the amount rather than the class of food that is at fault, as happens in the case of rheumatism, gout, etc. (Aamvaat, Vaat Rakt) it should be brought to a minimum that is easily digested.

Exposure to cold and living in damp weather, and all diets and drinks of cooling nature, impair digestion and promote dyspepsia, hence they should be avoided by one who is liable to suffer from the diseases of Vayu.

Since the process of metabolism is weak in those whose vitality is low, it is natural that the normal or abnormal products of metabolism may get accumulated in the body and become the root cause of deranging the Vayu. In order to eliminate these bodily poisons some or all of the five eliminative measures (Panch Karmas) are resorted to. To get rid of the poison recourse is taken to the purgative treatment (Virechan chikitsa). Since the patients suffering from the diseases of Vayu-disorder are weak, only mild purgative as castor oil along with the warm decoction of such medicines as "Dashmool" (ten roots), Shunthi (dry Ginger), Guruchi, Errendmool, Ashwagandha, Shataavri, Balaa, Haritaki, Devdaru etc., should be given or one drachm of 'Trivrit' or Haritaki powder mixed with eight grains of Shunthi may be administered with the 'Anupan' of milk or the decoction of Raisins, Haritaki, Aamlaki, Fig, Rose petals, Senna, Anise, Cassia etc., may be given.

Like the use of purgatives that of the emetics also (as half a drachm of Madan Phal or emetic-nut powder given with warm salt-water) eliminates poisonous substances, especially, if they are situated in the upper portion of the body as stomach, respiratory passages, eye, ear, nose, throat, etc.

Besides these two methods 'Vasti' or the use of enema is considered as the best method for eliminating the poisonous substances and counter-acting autointoxication going on in the body. When one or two pints of warm saline water mixed with honey, till oil, whey, etc. or some light decoction prepared from tonic herbs such as Dashmool, Balaa, Barley, Devdaru etc., mixed with salt, honey, Gud, Til oil, whey, Asafœtida, is run into the rectum it is called 'nirooha vasti'. In case 4 oz. of sesamum oil, olive oil, or an oil prepared from tonic herbs such as "Maash tel" "Naraayan tel", "Balaa tel" is introduced into the rectum and retained for some time, it is called "Anuvaasan Vasti". Such Vastis as are eliminative as well as nutrient are considered more useful for the patients of Vayu-disorders. There is some reason to believe that toxic absorption generally takes place from the bowels, hence importance of the 'Vasti' or colonic douche may easily be gauged. For those who are weak and feeble 'Vasti' is the best method which evacuates the bowels without weakening the patient.

DIAPHORESIS (SWEDAN) :—

Prior to administering an emetic or purgative or a Vasti the patient is given a steam bath or hot air bath, or sun bath, for about 30 minutes. This treatment by heat or thermotherapy is called "Swedan" treatment. When this is applied to a part or whole of the body it stimulates circulation of blood, carries the toxins lying in the tissues to excretory organs, such as bowels kidneys, skin, etc., and induces perspiration. Thus it not only helps in eliminating the toxins but provides the organs with fresh blood which contains nutriment and defensive agents. The toxins driven out from the tissues naturally are brought to the bowels, where from they are subsequently evacuated by means of purgative or emetic, or "Vasti" treatment.

SNEHAN : (OILING) :—

Since 'Swedan' or treatment by heat is depressive, prior to its application the 'Snehan' treatment is given to the patient. 'Snehan', of the body consists in applying the simple or some medicated oil as 'Maash tel', or 'Narayan tel', all over the body with some friction and ingesting of 'Ghrit', mixed with some light gruel. This soothes and lubricates the passages of the body through which the toxins and excretions pass and thus paves the way for their easy removal. Besides, this method of oil-massage quickens the circulation of blood and lymph and dislodges the toxins and increases the vitality of the tissues. Hence the oil-massage is considered to be a valuable method for the treatment of disorders of Vayu.

INSUFFLATION : (NASYA) :

Insufflation into the nasal cavity also helps in the treatment of the disorders of Vayu. Powders consisting of such irritants as dry ginger, black-pepper, long-pepper (Trikatu), kat phal, vach, salt, camphor etc., eliminate toxins by increasing the nasal excretion, and thus are indicated in the treatment of mental and brain disorders such as nervous headaches, epilepsy and mild types of insanity. Instilling of nutrient oils such as 'Anutel', 'Maash tel', Narayan tel', being restorative is given in the weakness of the eyesight, tinnitus (Karnghosh), nervous headache and chronic degenerative diseases of the nose.

The purgative or the emetic medicine for elimination purposes is given once a week, and is every time preceded by 'Snehan', and 'Swedan' treatment. This eliminative (Shodhan) treatment should be continued till the symptoms show attenuation.

BLOOD-LETTING :—(RAKT MOKSHAN) :—

Blood-letting by venisection (Shiraavedh), cupping (Alabu) or application of leeches is a time-honoured remedy first introduced by Ayurveda for the elimination of the bodily poisons. Withdrawal by venisection of blood up to the extent of 10 to 20 oz. often gives prompt relief in intoxication (Mada), epilepsy, nervous headaches, neuralgias, chronic skin disease as arise due to the presence of some poison in the blood or high blood pressure, provided the patient is robust and is able to withstand the consequent weakness. Local blood-letting by cupping or by the application of leeches goes a long way in alleviating the localised pains.

PALLIATIVE TREATMENT :—(SHAMAN CHIKITSA) :—

The object of treatment of 'Vatic' patient is to increase the elements of earth, water and fire and at the same time to decrease the element of Vayu in his body. This purpose is achieved by adopting a dietary and mode of life that tend to tone up the body, improve digestion and general health and keep the mind calm and cheerful. The diet should be generous, nutritious, fatty, easily assimilable and of heating or stimulating type (Ushna) avoiding all that is of cooling nature or depressive (Shit). His food should consist of cow's milk, butter, ghee, oil, whole meal bread, meat soups, fruit juice, green vegetables, dry fruits, hot water, and hot drinks. He should live restful and care free life in a place which is warm and free from draught or cold breeze. He should be shielded from annoyance or excitement. Massage with 'Maash tel', 'Balaa tel', 'Narayan tel' or any nutrient oil all over the body once or twice a day accompanied with saturation of the head (Shiro Vasti) with one of these oils and instilling of 'Anutel' in the nasal cavity followed with tepid bath infuses new life into the body.

Regarding medicines all the drugs that are tonic, alterative, nutrient, stimulating, digestive, sedative to the nerves are beneficent for the disorders of Vayu. Thus 'dashmulaarisht', 'dashmulaadighrit' 'Maha aswagandhaaghrit', 'Maha raasnadi decoction with ghrit' and preparations made of gold, mica, pearls and other Ratnas such as Nav-Ratnamrigank, 'Chaturmukha', 'Maha-Lakshmivilaas', 'Vaatchintamani', 'Vasant Kusumakar' etc., and 'Yograaj Guggulu', 'shilajatu,' makaradhwaj with Kasturi and camphor are generally used for the disorders of Vayu. For the 'Vatic' disorders of the intestine, Hingu-Trigun tel (Ashtang-Gulm), Lashunaashtak, Hingwashtak, Hinguadi with ghrit ; for the Vatic disorders of the respiratory system, dashmulaadighrit, dashmulaarisht, Pushkarmulaasav, Chyavanprash, Amrit Prash, Shatpal-ghrit, etc., for the Vatic diseases of the eye triphala ghrit ; for the Vatic skin diseases, Tikt ghrit ; for the vatic diseases of the brain, Brahmi ghrit Paishachik ghrit, Saraswatarisht ; for the vatic disorders of heart and blood and blood vessels Shilajit with Triphala, Abhaya-arisht, Triphala ghrit, Punarnavaarisht, Dashmool Haritaki, Chyvanapraash etc. are prescribed generally.

CHAPTER III

Pitta or the element of catabolism.

PHYSIOLOGICAL FIRE (PITTA DHATU).

'*Bhutaagni*' (Physical fire) :—According to Indian philosophy Ayurveda believes that the element of fire or Agni exists in every substance of the universe carrying on a constant molecular movement. Due to this fact, not a single object in the universe is static but is subject to the process of oxidation. Thus the animal, vegetable, and mineral world every moment of its life is being reduced into simpler elements and again from the simple elements are being reconstructed the fresh bodies of the animal, vegetable and mineral world. This cycle of destruction and reconstruction is attributed to the existence of an inherent 'agni' called 'Bhutaagni', or physical fire by Ayurveda. The external heat or the heat of the sun only helps or activates it. This truth has appropriately been described by "Upnishad, Kath" "Agniryatheko bhuvanam pravishto roopam—roopam pratiroopobabhuv' that "though agni (fire) is one but entering into the different substances it has assumed thousands of forms".

This 'Bhutaagni' is considered to be of five kinds, viz. the heat that takes part in the oxidisation of the substances derived from earth (or Parthiv substances), is called the fire of earth (Bhoumaagni), that taking part in the transformation of the substances derived from water (or the Aapya substances) is called the fire of water (or Aapyagni) and in the same way agnis, oxidising the substances derived from 'Agni', Vayu, and Aakaash, respectively (that is Aagneyagni, Vayavyagni, Aakaashagni) are postulated. These five 'Bhutaagnis' are the cause of all chemical changes taking place in the material world (Bhoumapyaagneya Vaayavyaah Panchoshmanah sanaabhasaah. Ch. Chi. 15).

The substances mainly derived from the element of earth, and the results of Bhoumaagni (or the fire of earth) when taken into the body increase the property of solidity or compactness in the tissues. The articles of food and drugs that have predominance of the element of water and are the results of Aapyagni (or the fire that transforms water) when injested produce the property of liquidity in the tissues. The substances having the predominance of the element of heat and therefore resulting from 'aagneyagni', (the fire that transforms the element of fire) when used aggravate the heat of the body. The food that has predominance of the element of Vayu and is the result of the Vaayavagni, (the fire that takes part in transforming the element of Vayu) when taken into the body increases the property of movement in the organs. In the same way different kinds of foods and drugs derived from Aakaash, (or the element of space) and the results of Aakaashaagni (or the heat that transforms the element of ether) when taken into the body produce lightness and other qualities of the Aakaash (Yatha swam swam ch Pushnanti dehe dravya gunaah prithak. Parthivaah Paarthivaanev sheshaah Sheshanshch Kritsnashah. Ch. Chi. 15).

DIGESTIVE FIRE—(PAACHAKAAGNI).

Just like 'Bhutaagni', or the element of heat present in every part of the [illegible] there is a Dehaagni, or the heat of the living beings carrying on the function of oxidation in every part of the body. Hence every part of the body has a natural capacity to digest and absorb whatever is introduced into it. For instance, if milk, fat, or glucose or blood is injected under the skin or intramuscularly, it gets digested and absorbed within a short time. The organs comprising the elementary canal possess the capacity of the digestion in abundance. Hence they are called the seat of Paachakaagni (or Digestive fire). It is really a wonder how this agni situated in the tissues of the canal renders the food-ingredients so throughly soluble and assimilable and in such a short time, since the same amount of food cannot be dealt with so thoroughly and easily, however great an amount of oxygen and digestive enzymes are added to it in the laboratory. All the various digestive enzymes appear to act only as catalytic agents and it is the animal-heat like the heat of the incubator of the laboratory that plays the main role in carrying on the digestion of food.

METABOLIC HEAT :—(DHATWAGNI).

The digestive process reduces the food into soluble proteins or albumin, grape sugar emulsified fats and soluble salts out of which are evolved such proteins, sugar, fats, and salts as are insoluble and enter into the composition of the tissues. The 'agni' that plays the part of producing the chyme and chyle from the food ingredients is called 'Rasaagni', the metabolic heat that utilizes the 'ras dhaatu', and transforms it into the blood is called 'Rakta-agni', the agni that utilizes the blood and builds up the muscular tissue out of it is called 'maamsaagni', and thus there are seven agnis one to build each dhaatu that is 'Ras,' 'Rakt', 'Maams', 'Asthi', (bone), 'marrow' (Majja), fat (Meda), 'semen' (Shukra), respectively. Of course various cellular enzymes are required to elaborate the tissues but they act only as catalytic agents. It is the 'agni' or animal heat present in the tissues, that really carries on the metabolic process taking place in them.

MALPAACHAKAAGNI : (EXCRETORY FIRE)

The metabolic heat or agni that breaks down the worn out tissues into such waste products as can easily be excreted by kidney, skin, lungs etc., is called 'Malpaachakaagni'. Though this change is assisted by enzymes, still it is chiefly the heat of the body that carries it out.

BHRAAJAK PITTA : (THE FIRE OF THE SKIN)

The capacity of the skin to digest and absorb the materials coming in contact with it is attributed to the fire (Agni) existing in it which is called 'Bhraajak Pitta', because in virtue of oxidising and excreting the waste products in the form of sweat, it preserves and enhances the natural purity and glow of the body.

RANJAK PITTA : (BLOOD COLOURING FIRE)

Ayurveda holds that a peculiar heat or chemical activity goes on in the liver and spleen that elaborates the blood colouring material (probably from the iron containing pigment accumulated in their capillaries and sinuses) which is called 'Ranjak Pitta', or blood colouring fire.

SAADHAK PITTA : (THOUGHT PRODUCING AGNI)

Ayurveda believes that the mental phenomena as thoughts and emotions are the products of the animal 'agni' acting in the brain cells, just as all other bodily products like blood, bile, etc., result from the activity of the bodily agni. This agni is called 'Vichaar Saadhak', or thought producing Pitta. Since agni is supposed to be evolved from 'Satwa' and Rajas of Prakriti when this agni functions properly the mental vision or perception remains clear, quick and perfect. Those who have this agni at its best are gifted with exceptional 'Medha' (Wisdom) and foresight. To the extent to which this agni or analysing-chemical force or capacity is defective the intellect is clouded and judgment is impaired. Just as the agni when functioning properly oxidizes and helps in eliminating the waste products, and keeps the body clean and pure even so the Saadhak Pitta by oxidizing all poisons keeps the mind clear. Charaka says that, "when pitta is in order the feelings of fearlessness, cheerfulness and clearness are manifested and when it is disordered the countrary feelings of fear, anger and confusion result." (Su 12). Sushrut also says (sha 4), "that a man having the predominance of pitta is gifted with wisdom and keen intellect."

AALOCHAK PITTA : (IMAGE FORMING FIRE)

The power of the eye to perceive objects is attributed by Ayurveda to this agni, which acting in the eye is called Aalochak or Image-forming Pitta. Ayurveda appears to hold that the rays of light reflected from the external object effect a chemical change in the substance of the retinal layer and thus form an image in it similar to that which is formed on the sensitive-plate of the camera with this difference that the former is transient while the latter is a fixed one. The agni or heat that brings about this chemical change is called Aalochak Pitta.

THE PITTA OR AGNI THAT CARRIES ON METABOLISM :

Agni that digests food and carries on destructive metabolism is considered by Ayurveda to be an inherent characteristic of the living tissues Charaka says "one lives a healthy life so long as this agni is intact, and with its extinction the life ends." (Shantegnou mriyate yukte chiram jivatyanaamayah, Chi 15.) But to preserve this Dehaagni it is necessary to supply the body with food, which by its combustion in the tissues generates heat and keeps up this agni of the body burning. A certain percentage of heat is converted in to energy that is utilized in replenishing the exhausted vital powers or 'Praan' of the body. (Praanashchoktah dehaagnihetukaah. Ch. Chi 15). Hence the life owes its existence to the proper working of both Vayu and Pitta in co-operation.

Dehaagni being the cause of bodily temperature is called Pitta (from taap). It exists in every part of the body and some of its main seats have been described above, but as a whole, the middle part of the body consisting of liver, spleen. pancreas, stomach, small intestine, kidney including supra-renal-gland is considered, by Ayurveda, to be the chief region of Pitta. These organs play an important part in supplying the body with necessary heat and in activating the Agni-Karma or metabolism of the body. When the liver or the stomach or any of these organs mentioned above is damaged to some extent, and as a result the 'Agni Karma' is lowered, temperature becomes subnormal, digestion grows weak, appetite fails; the therapeutic use (oral or parenteral) of the enzymes or the extracts or the desiccated powders of the cellular parts of these organs goes a long way in activating the agni Karma', and alleviating the resultant symptoms mentioned above. Bile (oxbile) and urine have been used since long by Ayurveda, but the liver, suprarenal gland, stomach etc., have come in vogue since recently to accelerate the bodily Agnikarma.

THE PERIODS WHEN AGNI-KARMA IS NATURALLY ACTIVE

There are some periods in which this agnikarma becomes more active. For instance during the twenty-four hours of the day it becomes active at noon when the sun is hottest, and at the time when the digestion is at its height. Round the year the 'agni Karma' becomes accelerated when the atmospheric humidity is lowest and the sun is hottest, as happens in the season of autumn comprising september and october. In the life time of one it is the middle part that is, from the 25th year onward to about the fiftieth year that the catabolism or agnikarma occurs in a pronounced form, so much so, that it rises to be equal to the anabolism. During the periods mentioned above excessive in-take of all stimulating diets and drinks and indulging in the ways of life that tend to activate catabolism unduly, should therefore be avoided.

On the contrary when 'the agni-karma' of the body is below par or when the weather or the country in which one lives is very cold and during the morning or evening hours and during the first and the latter part of the life, one should take care to take to such diets and drinks and modes of life as stimulate or activate metabolism and avoid all that tends to depress it further.

PITTA PRAKRITI (SANGUINE TEMPERAMENT).

An individual in whom the element of agni that carries on the tissue break-down or catabolism is hereditarily above the normal level is said to have the temperament or 'Prakriti' of Pitta. When the destructive processes are camparatively more predominant thon the anabolic (or building up) process, the individual has certain characteristics that distinguish him from others. Considering his physique he consumes more food and water to make up the deficiency and also he excretes more waste products in the form of sweat, urine, fæces etc. Owing to predominance of oxidation of the waste products his body, skin, nails, hair etc. are clear and bright, and his build up is of intermediary type, neither too thin nor too fat. As a result of excessive tissue-break-down the signs of old age set in, earlier, in his body.

As to his mental condition the role of metabolism being high in him, his mental responses are quick, his intelligence is keen, and his arguments are irrefutable. His mind and body are active, but neither too irritable nor too slow.

Besides, all diets, drinks, drugs and the season that are of heating nature do not agree, while diets etc. of cooling nature agree with him.

THE CAUSES THAT ACTIVATE PITTA

All the excitents and irritants that rouse the agni of the body into activity and thus promote the 'agni-Karma' or chemical activity of the body are said to be the causes of Prakop of Pitta. For instance, excessive heat of the sun and fire as in the days of autumn, living in a hot or tropical country, over-exercise, over-eating, the time when digestion is at its height, fermentation of the food in the stomach or intestine, hot drinks, excessive use of the stimulants such as tea, alcohol, vinegar, spices, pepper, onion, garlic, mustard, ginger, sesamum seeds, pickles, molasses, dry fruits, oil, animal fats (except butter), meat, fish, acids, alkalis, salts, tobacco etc, use of poisonous substances, and indulging in strong emotions of lust, anger, fear, grief, etc. all tend to provoke the agni of the body. Though all foods stimulate the 'Agni-karma' of the body yet in comparison with vegetable food, meat is more stimulating as 500 grams of meat are known to increase the rate of metabolism by 20% which continues at that level for four hours, while the same amount of carbohydrate food increases the rate of metabolism by 5% only.

In this state of the body when its tissues are irritated it is rendered more predisposed to infection, and if a bacterial poison enters into it, the virulence of the poison, somehow, gets enhanced so that the same toxin which otherwise would have remained ineffective proves to be a pathogenic one. In response to this toxin the bodily 'agni' gets roused and a large amount of heat constituting fever is generated or an acute local inflammation is produced. The 'agni' thus stimulated or congestion of blood thus produced destroys or oxidises the poison and saves the body from destruction, though the tissues of the body are to some extent consumed in this fire. Thus the acceleration of Agni karma is a defensive measure on the part of the body to meet the invading poison. Ayurveda holds that the bodily predisposition to disease is more important than the bacterial invasion in view of the fact that the bacterial poisons continue to be ineffective solong, the body is not exposed to some irritant, as sudden advent of summer or exposure to severe heat, etc., and that disease flares up only in that part of the body which is subjected to excessive friction or irritation.

DISEASES DUE TO THE ACTIVATED OR ACCELERATED (PRAKUPIT) AGNI

FEVER DUE TO THE ACTIVATED AGNI (PITTA JWAR).

In case the poison of some virulence gets into circulation and comes in contact with the whole of the body the reaction on the part of the agni is general and intense giving rise to high fever. Thus all fevers occurring as the result of excessive production of heat or accelerated Agni-karm in response to the acute toxœmic or septicæmic substances and attended with usual symptoms as sweating, thirst, vomiting, diarrhœa, delirium, intoxication, anæmia, quick bounding pulse, etc., are called Pitta-Jwara or fever due to the disorder of Pitta.

DISEASES OF THE BLOOD DUE TO THE DISORDER OF PITTA.

The hæmorrhagic or purpuric state which is either due to excessive hæmolysis or due to the damage done to the endothelial lining of the most susceptible blood-vessels by some toxic agent circulating in the blood, being caused by the aggravation of pitta in the blood is called 'Rakt Pitta' in Ayurveda. (While such hæmorrhagic state as is mainly due to vascular hypersensitivity or vascular fragility or the inadequacy of the essential elements of the blood is called Vatic Rakt Pitta).

The type of anæmia mainly attributed to the excessive destructive action on the blood of the bacterial toxins and other poisons is called 'Pitta Paandu' and in the same way the type of jaundice occurring as the result of excessive hæmolysis and consequent increase in the formation of bile pigment is called Pitta Kaamala (while that type of Kaamala which is mainly due to the degenerative or cirrhotic changes occurring in the liver is called Vatic Kaamala and when followed by more or less ascites is called Kumbh-Kaamala).

DISEASES OF THE STOMACH DUE TO THE DISORDER OF PITTA.

When toxins bacterial or metabolic are excreted through the stomach or intestine, especially in an individual with constitutional hyperchlorhydria and hypersthenic gastric diathesis (Tikshnaagni) or irritant foods are indulged in by one of the same constitution, gastritis attended with thirst, vomiting, heart burn etc., called Amla-Pitta in Ayurveda or enteritis associated with profuse watery diarrhœa called 'Pittaatisaar' ensue.

DISEASES OF THE LUNGS DUE TO THE DISORDER OF PITTA.

When a virulent toxin or poison gets into circulation in an individual who is predisposed to over activity of 'agni Karm' and whose lungs are susceptible, it is excreted into the lungs and thus it sets up hyperæmia or acute inflammation attended with such symptoms as high fever, purulent expectoration, thirst etc., in the lungs and respiratory tracts. This condition in Ayurveda is called Pitta Kaas or Bronchitis due to the overactivity of the digestive process in the lungs.

SKIN DISEASES DUE TO THE DISORDER OF PITTA.

Acute vesicular, pustular, bullous eruptions or erythematous rashes or acute inflammatory lesions of the skin due to the presence in blood of some toxic substance of bacterial or gastro-intestinal origin are called skin-diseases due to the Pitta.

DISEASES OF THE URINE DUE TO THE DISORDER OF PITTA.

When urine contains blood (is dark in colour) or haemoglobin (is red in colour) or bile pigment or urobilinogen (is yellow in colour) or other substances resulting from excessive 'agni karma' or destruction of the blood it is called 'Pitta Meha' in Ayurveda.

ACTUE INFLAMMATION (PITTA SHOTH) :

In case the reaction on the part of the agni in response to a toxin circulating in the blood is confined to an organ only, actue inflammation or abscess formation accompanied with redness, heat, liquefaction etc., follows, which in Ayurveda is called Pitta Shoth. All such actue inflammations as Acute Appendicitis (Pitta gulm), Acute Peritonitis, (Pittodar), Empyema (Klom vidradhi), Peri Nephritis (Vrikka Vidradhi), Suppurative Encephalitis (Shankhak shool), Osteomeylitis (Asthi Vidradhi), Suppurative Sinusitis (Pitta Pratishyaaya), Suppurative Tonsillitis (Gal Vidradhi), Pelvic Cellulitis (Makkall Vidradhi), Hepatic Abscess (Yakrit Vidradhi), Acute Mastitis (Stan vidradhi), etc., in Ayurveda are regarded as local reactions of Pitta in response to the toxins circulating in the blood. This reaction is beneficial to the patient in as much as it is an attempt on the part of the body to destroy the toxin in question.

PITTA KSHAYA OR DEFICIENCY OF PITTA :

If the agni of the body is inadequate and unable to react to the action or irritation of the poison and consume it, the temperature of the body or the part involved falls, and the prognosis becomes serious. This condition in Ayurveda is called Pitta Kshaya or want of 'Pittagni'.

TREATMENT FOR THE DISEASES OF PITTA

PREVENTIVE TREATMENT :

Those who are not accustomed to heat or stimulating articles of food should avoid them as far as possible. They should be carefully guarded against, during the early part of summer and autumn. During these seasons the quantity of daily diet also should be cut down to the minimum.

CURATIVE TREATMENT : ELIMINATIVE TREATMENT ;

(SHODHAN CHIKITSA) :

Since the reaction on the part of 'Agni' constituting fever and various inflammations is a defensive measure it should be promoted with a stimulating, diaphoretic and hot treatment. With this object the preparations of aconite as "Mrityunjay Ras" and Laghu-Panch-mool quaath, are generally administered.

After the waste products (malas) of the body along with the invading poison have been oxidised and as a consequence of it temperature declines a cathartic, like the powder of Haritaki or Trivrit or Triphala, or decoction of Draaksha, Haritaki, Aaragwadh, Katuki, etc. should be administered. Since cathartics act directly on the detoxicating organs like liver, spleen intestine and purge the body of its toxins, it is said to be the appropriate treatment for diseases of Pitta. Another method to eliminate the toxins from body and to purify the blood, as advised by Ayurveda, is Vene Section. Thus in acute inflammations, acute fevers, malaria, erysipelas, septic and eruptive fevers toxæmia, tendency to haemorrhage etc., toxins are got rid of by means of cathartics and vene section.

PALLIATIVE TREATMERNT: (SHAAMAK CHIKITSA) :

Since heat promotes the activity of poisons and application of cold hinders it the cold treatment consisting of cold climate, cold baths, cold applications, and such remedies as have cooling and soothing effect on the body is advised. Ghee or butter is extolled, in Ayurveda, as the best article of food that counteracts the effects of poisons, and lessens the overactivity of the agni. Hence pure ghrit or some prepared ghrit, as Triphala ghrit, Tikt ghrit, is administered in the diseases of Pitta with much advantage.

CHAPTER IV

The 'Kapha' or the element of Anabolism

PHYSIOLOGICAL KAPHA (KAPHA DHATU) :

Though their relative amount may vary from time to time and person to person both the processes of tissue-breaking and tissue-building go on hand in hand in every part of the body. The phenomenon of growth that involves multiplication of cells and production of new living-matter is a fundamental property of life. It lasts so long as the life lasts but in the embryonic and growing periods of life it is much more manifest. When the body has attained its full adult size at the age of about 20 or 25 though apparently it stops growing, but the growth assumes a different form of replacing the old and worn-out cells with new ones and repairing the wear and tear caused by disease and injury. The reproductive function which lasts up to the 50th year of life and the creative function of mind lasting until the end of life are also other forms of growth.

The chief factor that produces growth appears to be the tissue-fluid through which tissues derive their food. The ultimate substance present in the tissue-fluid that promotes growth and restores the injured tissues to their normal condition is called 'Kapha' in Ayurveda. (The word 'Kapha' means the substance resulting (Pha) from 'Ka'. or water).

The fluid derived from the tissues of embryo or living organs has been used in order to accelerate the rate of growth in artificial tissue-culture. This fact also has been proved that if the injured living tissues are washed with a sterile fluid, this fluid, when filtered is found to contain a substance which when added to tissue-culture activates the process of growth.

The tissue-fluid in addition to promoting growth exerts a destructive action on bacteria and piosons and renders the body immune to ordinary disease-producing organism. This property in Ayurveda is attributed to 'Kapha' which in this respect is called 'Ojas' (Sa chevojah smritah kaye. ch. su) or the resisting substance of the body. In virtue of this property of 'Kapha' all inlets of the body as the alimentary canal, the respiratory system and the skin, are liberally provided with lymphoid tissue.

Although the bodily fluids, in general, are said to be the seats of 'Kapha' yet some of the fluids have been particularly mentioned in this respect. For instance, the mucous secretion of the stomach that dissolves and prepares the food material for digestion is called 'Kledak Kapha' (that which makes a watery solution). The tissue fluid of the respiratory system or the lungs is said to be the chief seat of 'Kapha'. Since on its proper functioning the welfare of the body depends it is called 'Avalambak Kapha' (or Basic Kapha). The fluid of the oral and pharyngeal tissues that helps the tongue in perceiving the taste is called 'Bodhak Kapha'. The lymph-like-fluid of the brain called cerebro-spinal fluid, being nutritive to the nerve-tissue is named as "Tarpak Kapha". Since synovial fluid lying in the cavities of the joints lubricates the ends of bones and thus plays the role of Kapha it is called 'Shleshak Kapha', the fluid lying in the serous cavities also plays a similar role and may be called as 'Shleshak Kapha'.

On account of the existence of this element of 'Kapha', in them various vegetable and animal products form our food. The greater the amount of this element the more nutritious and 'Kaph-Vardhak' the food becomes. Such foods as milk, butter, cereals, eggs, meat soup, vegetable soup, and fruits which are rich in this element are considered as 'Kaph-Vardhak', or nutritious foods. In contrast to them the articles of food which are poor in this element and as such are not nourishing are called Vayu-Vardhak or less nutritious foods.

THE PRAKRITI OF KAPHA (PHLEGMATIC TEMPERAMENT) :

The person in whom the element of water is predominant over that of agni or in whose tissues constructive process is, constitutionally, in excess of the destructive one, is said to have the temperament of Kapha. On account of natural good nutrition his body is well-nourished, well-proportioned, handsome, strong, stout, but slow in movements. The amount of food he takes is less in comparison to the build up of his body. He can stand hunger, thirst and privations well. Mentally he is over-inhibited and hence unexcitable, calm, quiet, slow and critical in nature. His power of resistence, power of raproduction and his capacity of forbearance and remaining unruffled is great. The persons having these characteristics often succeed in winning friends for themselves and attaining their worldly objects easily.

Causes of the disorders of Kapha :

Excessive intake of nutritious diet and drinks combined with such factors of life as want of excercise, residing in cold and damp regions, excessive sleep, rest, carefree life and phlegmatic temperament bring about a state in which the bodily income or constructive side of metabolism increases and the bodily expenditure or destructive side of metabolism decreases.

In this state, when the oxidative process (Agni karm) of the body is weak the food consisting of carbohydrates, fats, and proteins is not properly oxidised and as a result of its faulty combustion such products of incomplete oxidition as lactic acid, fatty acids, cholesterol, uric acid, etc., called in Ayurveda as "Aama Vish" or metabolites are formed in great amount and get accumulated in the blood as well as in the tissues. Accumulation of these incomplete end-products in the bodily tissues acting as a mild irritant poison, according to Ayurveda, gives rise to the disorders of 'Kapha' and the state in which they accumulate in large quantity in the body is called aggravation (Vridhi) of Kapha.

Some natural conditions tend to aggravate 'Kapha'. For instance, after hearty meals when income exceeds expenditure, during the first part of night owing to sudden advent of cold ; and in the early part of day, as well as during the time of spring when heat of the sun grows suddenly, and in the first part of life when naturally growth exceeds consumption, retention of lymph in the tissues is liable to take place.

Diseases due to the derangement of Kapha :

This generalised aggravation of Kapha tends to localise itself in such a part or organ of the body in which the blood vessels are congenitally weak or have been rendered weak under the influence of some external irritant or exposure to cold. The blood with metabolic mal-products gets congested in the dilated blood vessels of the organ and so alters the vascular walls of the organ that transudation of lymph through them increases. With this transudation a large amount of metabolites gets into the tissues of the organ and raising its tissue-pressure makes a greater demand of lymph from the blood vessels. In this way owing to excessive exudation of lymph a white swelling appears which in Ayurveda is called 'Kaph Shoth', or 'Oedema', due to the derangement of Kapha.

This localised aggravation of 'Kapha' or Kapha Vridhi renders the organ vulnerable to infection. In the words of "Charaka, the healthy tissue-fluid which is the strength or 'bala' and is a bactericidal substance of the body becomes 'mala' when vitiated, and a good medium for the growth of bacteria. (Prakritastu balam shleshma vikrito mala uchayate, sa chevojah smritah kaaya sa cha Papmopadishyate, Ch su.)" Thus some kind of germ gets a foothold in that part and begins to grow and produce a poison. On account of the irritant action of this poison a reaction on the part of tissue-fluid consisting of protective, and reparative activity takes place which constitutes 'Kaph-Shoth'. In order to destroy, and flush out the poison the tissue produces a great amount of exudating fluid. In this variety of oedema the protective, reparative or proliferative activity is in ascendance over the destructive one.

This kind of inflammation called catarrhal or proliferative inflammation or oedema or Kapha shoth can take place in any organ of the body. A few of them for the sake of elucidation may however, be mentioned here.

RESPIRATORY DISEASES DUE TO THE DERANGEMENT OF 'KAPHA'.

If the respiratory system is exposed to chill or irritating vapours when there is general aggravation of 'Kapha' in the body, any part of the mucous membrane of the tract is liable to get infiltrated with the fluid, with the result that, such diseases as common cold (Kapha pratishyaaya), Pharyngitis (Shleshmic galshoth), laryngitis (Shleshmic Kanth shoth), Bronchitis (Shleshmic kaas), pulmonary oedema consisting of serous exudation into the air vesicles (Shleshmic Puffus Shoth) all accompanied with copious discharge of mucous exudation may take place.

DISEASES OF THE ALIMENTARY CANAL DUE TO DISORDERED 'KAPHA':

If some indigestible food is ingested when there is already general aggravation of Kapha in the body, catarrhal inflammation of the stomach and intestine called catarrhal gastritis (Shleshmic amlapitta) and Dyspeptic diarrhoea (Shleshmic Atisaar) follow which are attended with such symptoms as fulness in the epigastrium, loss of appetite, nausea, salivation, vomiting of mucus in the former and passing of some loose, foul smelling, slimy stools in the latter.

When the brunt of dietary indiscretion falls on the liver and as a sequence catarrhal inflammation, followed by infection, specially occurs in the biliary passages, catarrhal-jaundice (Shleshmic Kaamla) attended by such symptoms as deep yellowish tinge and pruritus all over the body, anorexia, sense of epigastric fulness after meals, slight tenderness and enlargement of liver, and passing of clay coloured stools, result.

SKIN DISEASES DUE TO THE DERANGEMENT OF 'KAPHA :

When as a result of general aggravation of Kapha' inflammation of catarrhal nature takes place in mucous layer of the skin and in hair follicles the condition is called 'Kaph-Shoth', of the skin. The oedema of the epidermis, formation of papules, vesicles, bullae containing clear fluid and swelling of the follicles resulting in the production of such diseases as Eczematous dermatitis (paama), seborrhic dermatitis (Arunshi), acne (Yuvaan Pidica), etc. are said to be due to the disordered 'Kapha'.

RHEUMATISM AS THE RESULT OF DISORDERED 'KAPHA':

If there is inherited tendency in the joints and fibrous tissues like those of the sheaths of muscles, tendons and nerves to be affected, or they are rendered susceptible by such causes as exposure to wet cold, injury or strain, the general aggravation of Kapha is likely to give rise to catarrhal inflammation along with the accumulation of fluid in the synovial membranes. Thus rheumatic arthritis (Aamvaatic sandhi shoth), rheumatic fibrositis (Aamaavaatic maansshool), rheumatic tinosynovitis (Aamaavaatic Kandaraashoth) and rheumatic inflammatian in ligaments, articular cartilages, etc., are set up all of which are accompanied by pain and great discomfort. These rheumatic troubles, in Ayurveda, are attributed to the derangement of 'Kapha'.

- Sometimes in children, when there is general aggravation of Kapha in the body and the heart is more susceptible to get affected, the inner lining of the heart gets inflamed. This disease called rheumatic endocarditis (Shleshmic Hridrog) is accompanied by such symptoms as palpitation, dyspnœa or shortness of breath, pallor and indistinctness of the first sound.

OBESITY DUE TO THE DERANGEMENT OF 'KAPHA':

In those who are not only hereditarily predisposed to grow fat, but take food in excess of its rate of consumption, deposition of fat occurs. In general, this condition is called obesity (medovriddhi) and in particular when it occurs in the heart is called fatty infiltration of the heart. Both of them in 'Ayurveda' are attributed to the aggravation of 'Kapha'.

OEDEMA (SHWAYATHU):

Accumulation of metabolites (Aama) in the general capillary system as a result of over-eating and under-exercise is apt to increase transudation of lymph into the tissues and since such an accumulation is, obviously, more likely to take place in the cutaneous and renal capillaries, these two organs are more liable to suffer from the condition called oedema. Oedematious condition of the kidneys when followed by infection is called Glomerulonephritis or (Shleshmic Vrikkashoth) and is accompanied by such symptoms as malaise, nausea, vomiting and more or less suppression of urine. As a result of the failure of renal-function salt and other waste-products are withheld, which, in turn, lead to retention of fluid in the tissues and thus bring about general oedema called in Ayurveda shleshmic dropsy (shwayathu). On the other hand, when degenerative changes occurring in the vascular walls or defects in vascular innervation bring about oedema, it is called 'Vatic' dropsy.

PERITONEAL DISEASES DUE TO DERANGEMENT OF 'KAPHA':

Those who live well but do little exercise and consequently suffer from chronic gastro-enteritis, capillary-pressure in the peritoneum is likely to increase and if followed by infection it leads to chronic peritonitis which in Ayurveda is called 'Kaphodar'. As a result of increased capillary pressure in the peritoneum, if transudation of fluid into the peritoneal cavity increases, ascites or (jalodar) results.

It may be pointed out that when under-nutrition is the causal factor and fibrotic or degenerative changes are the main feature that bring about both peritonitis and ascites, the condition is described as 'Vatodar' in Ayurveda.

DISEASES OF THE BRAIN DUE TO DISORDERED 'KAPHA':

In him, whose brain is naturally, weak or has grown weak from other causes, the general aggravation of Kapha is apt to localise itself in the brain or in its coverings called meninges. This condition, if followed by infection, brings about Encephalitis (Nidra Rog) or meningitis (Shleshmic shirah-shool) or cerebrospinal fever (Kanthakubj-Jwar) all of which are attended with such symptoms as lethargy, stupor, coma, headache, vomiting, muscular-rigidity, stiffness of neck, slight fever etc.

Brain diseases like insanity and epilepsy when associated with the pathological lesion of Kapha or Oedematous condition, are accompanied by drowsiness, lethargy, slowness in movements etc., and are described as Shleshmic insanity and Shleshmic epilepsy respectively.

CIRCULATORY DISEASES DUE TO DISODER OF KAPHA:

The metabolic substances as a direct cause of over-eating and insufficient exercise, when introduced into circulation, increase the blood-volume and thereby raise the blood pressure, and as a reaction thereto heart and arteries get hypertophied. Therefore, on examination, the pulse is found full (Gurvi) comparatively more sustained (Sthira) and of higher tension (Stabdha). In case aggravation of Kapha is accompanied with fever also, the pulse is quick but slow (Manda) for the temperature.

When aggravation of Kapha localises itself in the heart rheumatic and valvular diseases are liable to follow.

Owing to the accumulation of metablites in the body retention of fluid in the vessels and tissues called hydræmia and œdema respectively follow, producing a kind of pallor in the skin which in Ayurveda is called shleshmic anæmia or (Paandu).

URINARY AFFECTIONS DUE TO THE DERANGEMENT OF KAPHA :

The pathological changes brought about in the urine as a result of large intake of food with diminished oxidation are described in Ayurveda as the diseases of urine due to the disorder of Kapha. The presence in the urine of such substances as urates, oxalates, phosphates, uric acid, urinary calculi, transitory glycourea, excess in quantity of mucus and water indicate that Kapha in the body is not in order.

OVERGROWTH DUE TO THE DERANGEMENT OF KAPHA :

The tumours and cysts (Arbud and Granthi) of benign quality are attributed, in Ayurveda, to over-activity of the growth-promoting substance (or Kapha) occuring in response to some injurious or irritant metabolite located in a tissue. Such over-growth takes place in the period of life in which Kapha is active. In case the power of Kapha has come to be defective or deficient as naturally happens in old age the overgrowth is liable to be attended with decay and turn malignant.

KAPH-KSHAYA :

The state of the body in which reparative, proliferative or preservative reaction in response to irritants becomes weak, is called, in Ayurveda, as a state of Kaph-Kshaya and is believed to be an unfavourable prognostic.

TREATMENT FOR THE DISORDER OF KAPHA:

According to Ayurveda all the means that reduce the elements of earth and water and increase the elements of "Agni," "Vayu" and "Aakash" in the body should be adopted to treat the disorders of Kapha.

ELIMINATIVE TREATMENT:

Since fasting allows the oxidative and eliminative processes to function uninterruptedly, it is the best means to achieve this end. Even a short fasting of three days' duration is sufficient to oxidise and excrete accumulated metabolites and thus cure an ordinary disorder of Kapha. A long fast lasting for a weak may cure even a chronic disorder of Kapha. A fast undertaken annually in spring helps one to remain comparatively healthy for many months. Those who cannot stand complete fast may be enjoined to subsist on the lightest possible diet consisting of fruits, boiled vegetables, butter milk or light tea for a period of a week or two.

The patients suffering from various disorders of Kapha should take such a diet as is light(Laghu) greaseless (Ruksha) and of heating or stimulating (Ushna) quality. It should consist of bread, barley, pulses of moong-moth-kulthi, goats' milk, butter milk, honey, gram-soup, game-soup spices, alcohol, asavas, hot tulsi drink, tea, and such vegetables as ginger. brinjal, parwal, bathua (Vastuk or chenopodium), radish (cooked) carrot, garlic, potato soup, karela, sohangjana, methi (Fenugreek) sooran (Amorphophalus) etc. Large meals, over-eating, and such foods as are indigestible, sweet, sour, greezy, and cocling in nature should be avoided. For example sugar, sweets, milk, curd, ghee, butter, rice, oil, nuts, plantains, oranges, pulse of mash, sesamum seeds, cold drinks etc., are prohibited. Regular exercise in its various forms being helpful in oxidising and eliminating the metabolites has special value in the treatment of Kapha. Out of all tension-eliminative measures taken in relation to the treatment of disorders of Kapha, the administration of an emetic is considered by Ayurveda to be the speediest method by which the body can be got rid of its metabolites. Tissue-retention in the body is generally followed by nausea and vomiting and thus stomach appears to be the natural outlet for the disordered Kapha. A dose of a brisk emetic (like madanphal) preceded by steam bath and followed by a purgative and enema with an interval of a day or two is given continually every week till the symptoms show an abatement.

When the head and respiratory channels are affected with tissue—tension or disorder of Kapha the method of snuffing (nasya) and of smoking (Dhumpaan) that promote excretion of mucus are found highly helpful.

PALLIATIVE TREATMENT (SHAAMAK CHIKITSA).

The medicines which are of digestive, stimulating, diaphoretic, diuretic, laxative property or are bitter or astringent or pungent or alkaline in taste are usually indicated for the treatment of the disorders of Kapha. Hence drugs containing trikatu, panchkol, trifala, alkalis, cow's urine, honey, bitters, aconite, alcohol etc., are prescribed for the disorders of Kapha.

In diseases in which all the three doshas are simultaneously observed, as a general rule, the disorder of Kapha is remedied first of all by fasting, warming and stimulating treatment and after the metabolites circulating in the blood have been oxidised, the treatment for Vayu or pitta whichever is predominant is instituted.

SUMMARY

To sum up the etiology of diseases, Ayurveda holds that there are two classes of diseases i.e., intrinsic (Nij Rog) as well as extrinsic (Aagantu Rog). The root cause of intrinsic diseases is the accumulation of waste matter or "dosha" in the body. This accumulation is brought about in three ways:—

(1) Due to impairment of vitality the tissues are rendered incompetent to expel their excretions completely.

(2) Due to overactivity of the destructive phase of metabolism a larger amount of waste products than the body can dispose of is produced.

(3) Due to over-eating and under exercise the tissues get clogged with incompletely oxidised products.

These three factors are called the disorders of "Vayu," "Pitta" and "Kapha" respectively, and are said to be the essential predisposing factors, which determine the occurrence of disease, inasmuch as in the absence of their disorder all other etiological factors remain ineffective. Accumulation of waste matter brought about by the disorder of these three "doshas" is, in course of time, followed by infection, which seems to be an attempt on the part of nature to oxidise and to eliminate it. Ayurveda lays greater stress on the intrinsic factors that bring about accumulation of "dosha" than on infection which is believed to be the incidental or subsidiary cause of disease. Charak says: "Fever cannot occur unless there is accumulation of "mala" or "dosha" in the body. 'Dehinam nahi nirdosham jwarah samupsevate.' (Charak, chi 3). Hence as regards the treatment, Ayurveda lays greater emphasis on the eliminative methods than on the palliative ones.

The diseases brought about, chiefly, by the inoculation of bacteria and bacterial poisons are called extrinsic (Aagantu Rog) diseases. But since bacteria cannot grow in a tissue in which the three elements are in perfect accord some kind of elemental disorder in the tissue must precede before bacteria can establish their foothold in it. Mostly it is due to our errors of omission or commission that our bodies are rendered favourable to the growth of bacteria. Hence such measures as can set the internal disorder aright and make the body unsuitable for the growth of bacteria are essential. So far as the extrinsic diseases are concerned, in addition to these measures, the anti-bacterial therapy the out-standing achievement of the modern science also must be taken advantage of, if we have to make Ayurveda a complete system of medicine.

CHAPTER V.

Tridoshic Approach of Ayurveda.

The objective of Ayurveda like that of Western Medicine, is to explore and explain the mysteries of life, with this difference that the former views all Biological phenomena in the light of the Tridosh theory. Ayurveda being founded by Vedic philosophers has naturally its basis in their philosophy which is rooted in the theory of 'Satwa, Rajas, and Tamas' and that of the "Panch Mahabhutas." According to Vedic philosophy these are the ultimate substances out of which the material world has evolved. The Tridosh theory of Ayurved is nothing but a modified Panch Mahabhuta theory made applicable to the organic world.

According to the Tridosh theory every living tissue is constituted of three fundamental elements which though in their subtle form are out of the reach of science they can yet be postulated from their tangible effects, operations and activities. The first of them being at the root of all biological movement is called 'Vata' or the element of vital energy. The second one conducting the destructive phase of metabolism is called 'Pitta' or the element of catabolism. The third one being the cause of growth or the constructive phase of metobalism is named 'Kapha' or the element of anabolism.

Various physiological activities and psychological behaviours of animals are attributed to the predominance or otherwise of one or other of the three elements. The effects of various foods, drugs, climates, geographical conditions etc. on the body are described in the light of their tendencies to accentuate or attenuate these elements.

Regarding diseases, Ayurveda maintains that so long as a particular element is in its normal state it can withstand even abnormal stimuli caused by the antagonistic substances without being affected in any way. But when an element, somehow, gets weak or susceptible it becomes predisposed to excitement with the result that in face of a substance of antagonistic nature it reacts more or less violently.

Thus, in case the element of vital energy or Vayu is excited it exhibits some abnormal movement or sensation in the organ involved. In case the element of catabolism or 'Agni' gets excited it produces extra general heat in the form of fever, or localised heat in the shape of an acute inflammation. When the element of anabolism or 'Kapha' gets stimulated it enhances the protective or reparative or proliferative activity in the form of an oedematous congestion of tissue-fluid or overgrowth.

The degree of weakness or derangement of a Dhatu can be ascertained by subjecting the body to gradually increasing doses of an antagonistic substance. In a comparatively healthy body a greater amount of the antagonistic substance will be required to cause Vayu Pitta or Kapha to react. Whereas in a person in whom the Dhatus are deranged in a greater degree a comparatively small amount of an antagonistic substance will suffice to make them react.

As regards the administering of antagonistic substances, cold and exhaustion in case of Vayu ; heat or diluted streptococcal fluid in case of Pitta; and a foreign protein in case of kapha, may for example, be employed. The Dhatus of the body when excited exhibit an excitement in that part of the body which is either congenitally susceptible or has been rendered so by external causes.

The reaction or 'Prakop' of a Dhatu in the form of a particular disease is a defensive action on the part of the body with the object to neutralise or get rid of the offending substance, and indicates its strength to cope with any exigency.

That extreme State of a Dhatu in which it becomes too weak to react even when exposed to a toxin, is called the state of attenuation or its "Hinavastha" and is a bad prognostic.

Regarding therapeutics, it may be stated, in brief, that all measures whether naturopathic or medicinal that set the disordered Dhatu (or Dosha) in order or in harmony with others constitute Ayurvedic treatment. For instance when the vital energy or Vayu gets, in face of an abnormal stimulus, deranged, and, as a result, the mind or body becomes restless or fidgety such measures as give the body and mind rest and improve their nourishment and eliminate the irritating toxin or the mental complex whichever is at the root of the trouble, would best serve to set the Vayu in order, again. In order to check the destructive process or the Pitta that has become more active such measures as may exercise a cooling and soothing effect both internally and externally, and may eliminate the toxins circulating in the blood should be employed. When the constructive or protective process gets more active in response to the mild irritating effect of the mal-products resulting from the diminished combustion, such measures as would eliminate these metabolites or stimulate their combustion should be employed.

So far as prophylaxis is concerned, to escape the diseases caused by the derangement of Vayu one should cultivate the characters of equanimity and good humour and to take care to avoid all that tends to drain the body of its vitality. Regular use of some animal or vegetable fat and occasional douching of the bowels help in warding off the diseases following the disorder of Vayu. In order to prevent the diseases consequent to the disorder of Pitta one should avoid all that stimulates the rate of metabolism unusually ; as the resulting catabolites cause auto-intoxication, which in turn, predisposes the body to infection. In fact, it is the presence of catabolites in the body that conduces to the rise of temperature. For the removal of these catabolic toxins some purgative medicine should be taken occasionally. In order to guard one self against the diseases caused by the derangement of Kapha one should avoid all such factors as lower down the rate of metabolism and thereby increase the amount of incompletely oxidised products in the body. Hence, regular exercise and observing of occasional fasts are enjoined as precautionary measures against the diseases caused by the disorder of Kapha.

Since the three elements of the body are interdependent, when anyone of them is deranged the other two cannot remain unaffected. For instance in case the Vayu or Vitality of an organ is lowered both constructive and destructive processes taking place in it also suffer a set back. Similarly when one of the opposite processes of Pitta and

Kapha grows more active the other must become slow. Hence, the object of Ayurvedic treatment always is to set right, first, the Dhatu that is primarily at fault.

Ayurveda, generally, classifies every disease in to four or five categories; for when an organ gets diseased it is either (1) due to the lowering of its vitality or (2) to the hightening of its catabolic activity or (3) to the overactivity of its anabolic process or (4) to a combination of any two or all of them.

Thus, according to the old saying that wisemen tell the same truth in different ways ('Akam sat viprah bohudha vadanti'—Rigved) the same medical truth is described by Ayurveda in terms of its tridhatu theory. The main difference between Ayurveda and other systems of medicine lies in their approach to or outlook of medicine which all try to explain, though from different stand-points. To solve the riddles of life Ayurveda applies its tridhatu theory which being deep and wide enough appears to be the best of explanations or solutions offered so far by different systems and therefore it will hold ground till a better one is available.

CHAPTER VI

Different kinds of the Vayu Pitta and Kapha defined

THE VAYU

Every part of the body to its minutest cell appears to be endowed with an innate vital energy or Vayu called by different names in different places. First and foremost of them is the 'Pran Vayu' or Inspiratory energy, which is said to be seated in the head or brain. On its proper functioning depends the proper working of the eleven 'Indriyas', *i.e.* the five organs of sensation (those of smell, sight, taste, sound and touch) five organs of motion (those of upper and lower limbs, tongue, rectum and sex-organ) and mind the organ of thinking. So the Tandya Brahman (1-15-2) says that "there are as many 'Pranas' in the head as are Indriyas in the body." Charaka also calls the head as 'Pranayatan' or the seat of Pranas or Indriyas. The innate vital power of the cerebral nerve cells carrying on the functions of sensation and motion appears to be called as Prana.

The same power of 'Prana' by correlating or associating different sensations gives rise not only to consciousness or awareness of the surroundings, but to the process of thinking as well. The mind also consisting of the primitive instincts or emotions possessed by man in common with animals and of the higher qualities as intelligence (Budhi) knowledge (Jnan) self-control (Dhriti) memory (Smirti) concentration (Samadhi) Judgment (Viveka) etc is a manifestation of 'Pranshakti.' So long as this power of Prana is in its normal state the organs of sensation and motion along with mind work properly and are kept under the control of intelligence and judgment the supreme qualities of the brain.

With the decline of the Pranshakti in the cerebral nerve cells, generally, occurring under the effect of bodily toxins, the intoxicating drugs, malnutrition, old age, shocks etc., the Indriyas first become irritable and finally get weak or paralysed. As to the mind its higher qualities *i.e.* intelligence, memory, concentration etc., gradually disappear and the lower instincts or emotions become prominent.

According to Ayurveda two more life giving activities also namely the inspiratory function and the act of deglution are said to be conducted by Pranshakti. In other words the Ayurveda appears to hold that the inspiratory and pharyngeal muscles are under the direct control of the centres situated in the brain, through some nerve, perhaps the vagus nerve.

THE UDANVAYU (EXPIRATORY FORCE)

An expiratory energy that acting through the thoracic and abdominal muscles and supported by the spinal nerves, during speech and physical exertion, pushes up diaphragm and expels the air of the lungs through the larynx and thus becomes an instrument for producing sound and physical effort, is called as the Udan Vayu.

Whenever, the Udan Vayu under the effect of some unaccustomed food or cold gets deranged a respiratory spasm accompanied by such diseases as sneezing or rhinorrhoea (Vatchhikka) asthma, croup, hiccup etc. occurs.

THE SAMAN VAYU (DIGESTIVE VITALITY)

The fact that mere presence of food in the stomach and intestine, even when their connections with the nervous system are severed, causes their secretion to flow, makes the cells of the mucous membrane of the intestine absorb food, and lets their musculature to move their contents onward, is sufficient proof that some kind of innate vitality or digestive urge is present in them. This natural power of digestion, assimilation and movement which is augmented by the craniosacral nervous system and inhibited by the thoracolumber nervous system is called as the saman Vayu. The impairment of this Vayu under the effect of some mental physical or toxic shock, results in nervous dyspepsia, nervous diarrhoea, intestinal colic etc.

THE APAN VAYU (EXCRETORY FORCE)

The causal factor of the natural expulsive contractions of such organs as bladder, rectum uterus etc., activated and controlled by the sacral nerves is called as the Apan Vayu. With the decline of this expulsive force detrusor muscle of the bladder, rectal and uterine muscles grow weak and irritable, giving rise to such diseases as spasmodic or nervous retention of urine (Vatic mootra krichhra) atony of the bladder, nervous constipation, and the diseases consequent to the atony of the uterus.

THE VYAN VAYU (CONTRACTILE FORCE)

Contractility rhythmic or non-rythmic is an innate property of both the voluntary and non-voluntary muscles including the heart, blood vessels, lymph-vessels, intestine etc. It is independent of any outside agency, since it works even when a muscle is isolated from the nervous system, provided it is kept in conditions that keep it alive. This energy is called as Vyan Vayu and is believed to be the root cause of various movements of the body.

Similarly the molecular movement occurring in the nervous tissue which propagates sensory and motor impulses is attributed to the Vyan Vayu.

With the deterioration of this Vayu such symptoms of degeneration as fibrosis, sclerosis (Kharata) atrophy (Laghuta) pain etc. develop in the muscular and nervous tissue.

THE PITTA

Besides the substance called Vayu which manifests itself as vital energy there is another life activity called biochemical one which is initiated by the Pitta. It, on the one hand converts the food into soluble proteins carbohydrates and fats etc. for assimilation, and on the other it transforms the disintegrating tissues into such matters or malas as can easily be got rid of. This activity latent in tissues becomes patent as soon as some food is introduced or some foreign matter presents itself in them. For instance, the blood shed into tissues is soon converted into bile pigment, haemosiderine etc. and the decaying cells and tissues are engulfed and digested by the wandering cells and are converted into pus and drained off. The point to be stressed is that mere introduction of some food or infective agent is enough to fire up this activity. Hence a rise of temperature or hightening of the catabolic activity is a certain proof that an obnoxious substance to be dealt with exists in the body. Since this 'Agnikarma' or biochemical activity works even in a denervated organ it appears to be an independent force.

The form in which it is found in the alimentary canal is called as 'Pachak Agni' or the fire of digestion. It is true that various enzymes as catalytic agents conduct the digestive process, yet in fact the digestive activity takes place even in the absence of enzymes provided the 'Pachak Agni' or the animal heat present in the digestive organs is intact. Enzymes appear only to hasten this natural process.

Impairment of the 'Pachak Agni' first leads to hyperchlorhydria, peptic ulcer, excessive appetite (Pittajirna) and then to want of digestion.

THE RANJAK PITTA (BLOOD COLOURING FIRE)

So far the origin of the pigment of the blood and chlorophyl of plants is not clearly understood, however, such facts as (1) the blood forming substance developed from the interaction of the 'Intrinsic factor of the stomach' and the 'Extrinsic factor in the food' is stored in the liver, (2) the iron freed from the broken up red cells is taken up by the cells of the liver spleen etc. and (3) the liver extract is extremely useful in the treatment of anaemia, point out that the blood-colouring matter is formed as a result of some 'Agnikarma' or chemical activities taking place in these organs. Obviously the deficiency of this Agni is followed by anaemia.

THE BHRAJAK PITTA (GLOW PRODUCING FIRE)

Ayurveda holds that the apparent glow of the skin is a result of a certain chemical activity taking place in it and since it serves to keep the integument pure and bright it is called as Bhrajak Pitta. The nature of this activity is not well understood however the facts that the skin continuously produces sweat and thereby keeps the body clean and pure, that the sterol of the skin under the effect of the sunlight produces vitamin D, that the skin contains a large quantity of blood approximating to 6th of the whole volume and that it digests, though in small measure, the fatty materials brought in contact with it suggest that the skin like the liver is an important place of Agni-Karma on the proper working of which may depend the natural glow or halo of the skin.

Stimulated by the bodily poisons when the cutical chemical activity or the Pitta of the skin becomes overactive the resulting catabolites give rise to erythematous rashes, pustular eruptions, skin-abscesses etc.

THE ALOCHAK PITTA (THE VISUAL BIOCHEMICAL ACTIVITY)

The assertion of Ayurveda that the visual sensation is the result of a certain Agni Karma taking place in the eye perhaps refers to the biochemical activity occurring in the pigment of the retinal epithelium, under the effect of light, which by stimulating the endings of the optic nerve produces a visual sensation to be perceived by the visual centres of the brain. Hence vision remains clear so long as the Pittagni of the eye or visual chemical activity taking place in the retina works properly.

THE VICHAR SADHAK PITTA (CEREBRAL BIOCHEMICAL ACTIVITY)

Ayurveda holds that just as glow of the skin and vision of the eye continue to be clear so long as the Agnikarmas taking place in the skin and eye respectively remain normal, so intellectual perception also remains clear so long as the metabolism or Vicharsadhak Agni of the brain is normal. With its perfection the intellectual vision and the power of discerning the right from the wrong grows clearer and more vivid.

When this pittagni grows weak, at first, it becomes excitable rendering the mental process very active, so much so that one with such a disordered mind begins to talk or act in such a way as makes him appear a genius. One with such an excitable mind may exhibit fits of violent emotions. However, the mind of such a patient, gradually, becomes clouded and confused.

As to the aetiology of the diseases of the Pitta the foods, drinks and drugs of stimulating quality by exciting the catabolic activity or 'Agni Karma' produce a greater quantity of catabolites than the body can dispose of. It is these catabolites that render the body susceptible to Pitta-Prakopa and consequent inflammation attended with suppuration.

THE KAPHA (ELEMENT OF ANABOLISM)

Besides these two primordial substances that give the living body vital and chemical energies respectively, there is another substance that gives it the power of protection. That substance called Kapha is said to exist in the fluid that surrounds and nourishes all the tissues. Such body fluids as the tissue-fluid, the lymph, the mucus, the amnion, the fluid of the serous cavities, the fluid of the articular capsules, the fluid of the ventricles of the brain and the cerebro-spinal subarachnoid space, the fluid of the chambers of the eye and the vitrious body etc. which are approximately of the similar nature are said to be the seat of Kapha.

THE RASBODHAK KAPHA (GUSTATORY KAPHA)

The watery secretion of the serous glands profusely provided in the vicinity of the taste buds on the tongue, in order to spread the substance to be tasted on the surface of the tongue is called as Rasbodhak or Gustatory Kapha.

THE AVALAMBAK KAPHA (RESPIRATORY KAPHA)

In order to keep the tissues of the respiratory passages bathed in a protective fluid the whole tract from the nose to the smallest bronchial tubes has been well provided with the mucous glands and masses of lymphoid tissue. Their secretion which not only facilitates the passage of air and flushes out the foreign substance that has gained access to it, but protects this important inlet of the body from bacteria and viruses by its bactericidal power is called Avalambak Kapha.

THE KLEDAK KAPHA (KAPHA OF THE ALIMENTARY CANAL)

The mucous membranes of the mouth, stomach, intestines, being full of lymphoid tissue secrete a viscid slimy and protective fluid which not only assists in solving the food material and makes it liquid, but in addition destroys bacteria is called as Kledak Kapha.

THE TARPAK KAPHA (CEREBROSPINAL FLUID)

Like the heart, lungs, abdominal and other organs the brain and spinal cord also are surrounded by what is called cerebrospinal fluid. Since by absorbing toxins circulating in the brain and spinal cord it protects them it is called as tarpak or nutritive Kapha.

THE SHLESHAK KAPHA (SYNOVIAL FLUID)

The fluid secreted by the endothelium of the synovial stratum and filled up in the articular capsules being lubricant to the ends of the bones is called as shleshak Kapha. The serous fluid surrounding and protecting the surfaces of the heart, lungs, tendons etc. also is called as Shleshak Kapha.

DISEASES DUE TO THE PRAKOPA OF KAPHA

A greater amount of metabolites (Ama) than usual is bound to accumulate in the body as a result of slowness of digestive or oxidative activity (Pitta). In order to absorb and drain off these malproducts and toxins and thereby protect the organs, congestion of lymph occurs. In case the poison concerned is destroyed or excreted by the 'Jal Karma' of Kapha no ill effect follows. But if either due to the abundance of the bodily mala or poison or due to the weakness of Kapha-activity the poison is not completely destroyed a swelling followed with infection occurs.

Thus various inflammatory processes of different mucous, serous, fibrous and other layers occurring as protective reaction on the part of Kapha, in response to an irritant poison, are described as diseases due to the disorder of Kapha.

CHAPTER VII

The Vridhi and Prakopa or Predisposition and the State of excitement of the Dhatus

According to the Ayurvedic interpretation the living things are said to be composed of five elements namely Prithwi (Solidity) Ap (Liquidity) Agni (Heat) Vayu (Energy) Akash (Space) out of which only three being active, they are supposed to be constituted of three substances. Because these are too primordial to be perceived they are inferred from their respective activities. The first of them the element of Vayu is inferred from the physical energy it gives to the living things, endowed with which they exhibit such vital activities (Charak, Sutra 12) and power of enduradce as cannot be explained otherwise. Similarly the Pittagni is inferred from its Agni Karma or the property of catabolic activity that it confers on the living organism. The Kapha is inferred from its Jalkarma or protective activity that it manifests when injury occurs or when a mild irritant comes in contact with the tissues. So long as these vital activities namely Gatikarma, Agnikarma, and Jalkarma of the Vayu Pitta and Kapha remain in order, coordinated and balanced (in samavastha) the body continues to be healthy.

Factors of various description exciting and activating the Vayu Pitta and Kapha to an abnormal degree, turn them—the Dhatus or keepers of the body—in to Doshas-or the vitiating agents-and bring about a pathological condition called disease.

THE VAYUROGAS

Such factors as rob the body of its vitality, as lead to the retention of the bodily malas, and as fatigue worries emotions etc. that produce a poisonous substance in the body are called as Vayu-Vardhak ones and the state in which vitality gets lowered, the malas (excretions) of the body and the products of physical and mental fatigue are retained in the tissues in a greater degree, is called the state of Vayu-Vridhi. In this state of exhaustion and slow poisoning the body gets predisposed to excitement in the face of a stimulus internal or external.

If the lowering of vitality and retention of bodily mala and other poisons continues the body begins showing signs of irritability in response to irritation of these poisons. This state of general excitability or increased Gati-Karma is called the state of Vayu-Prakopa.

If, as a result of treatment, Pran Shakti increases and either it by its increased excretory force purges the body of its poisonous substances or the body is purged of its mala by means of Panch Karmas, the prakopa of Vayu along with the disease, subsides.

In case the excitement of the Vayu is too weak to eliminate the accumulated malas, the disease assumes a chronic form.

THE PITTA ROGAS

Such factors as stimulate the circulation of blood and promote the break-up or combustive process or Agni

Karma of the body are called as Pitta-Vardhak ones. By enhancing Agni Karma they produce a greater amount of catabolites to oxidise which a further rise in the rate of Agni Karma becomes imperative. In other words by accelerating the normal process of disintegration of the tissues they increase the amount of the resulting products. But since this normal rise in the Pittagni is enough to oxidise these products no ill effect follows. This state in which the Pittagni is more active than usual is called as the state of Pitta Vridhi.

The next stage in which the Pittagni gets excited due to the greater accumulation of catabolites than it can deal with is called the state of Pitta-prakopa.

As a result of Pitta-prakopa the catabolites after accumulating in the blood start exuding in an organ which is predisposed to inflammation *i.e.* whose blood vessels are already weak, dilated and more permeable.

When, an organ in this state of susceptibility gets infected, the Pittagni that is already excited gets more excited in response to the infection and brings about acute inflammation which is an attempt on the part of the pittagni to ward off the invading organism. The fact that infections remaining ineffective so long as the Pittagni is in its normal state assume virulence when Pittagni is already excited proves that in the aetiology of acute inflammation pitta-prakopa of the body—the predisposing factor-plays a more important part than the succeeding infection—the incidental factor.

In case the Pittagni under excitement or Prakopa succeeds in overcoming the catabolites and the organism by displaying its Prakopa in the form of fever, congestion of blood, suppuration etc. the disease comes to an end and then the Pittagni returns to its normal state (Samavastha).

If the fight between the Pittagni—the defender—and the organism—the invader—is unequal the disease continues till either of them over powers the other (Dirgh Roga).

THE KAPHA ROGAS

Factors that upset the balance between the Kapha and Pitta either by lowering the rate of Agnikarma or by hightening the Jal Karma (Build up) unduly, and thus conduce to the accumulation of the products of deficient digestion and incomplete oxidation called metabolites or (Ama) are said as Kapha-Vardhak ones. As a result, the fluid of the tissues is bound to increase, in order to absorb these mal-products and to protect the organs from their ill effect. This state characterised by an undue or unusual increment in the tissue-fluid is called the state of Kapha-Vridhi which is accompanied by such signs as low temperature, malaise, aversion for food and cold, etc.

In the next stage when the accumulation of metabolites, occuring in a greater degree than the Kapha even in its state of Vridhi (or usual increment) can dispose of, provokes the Kapha abnormally and leads it to a state which is called the state of its prakopa and is associated with such signs as slowness of digestion, loss of appetite, malaise, excessive flow of saliva, vomiting etc.

In this state of Kapha Prakopa if the body gets a sudden exposure to cold and damp weather the blood-vessels of an organ which is already predisposed get dilated and [illegible] takes place in it. This localization (Sthansanshraya) of Kaph Prakopa is called a Kaphroga or Kapha-Shotha, a protective inflammation brought about by the excited Kapha in making an attempt to get rid of the metabolites.

This organ being susceptible to infection usually gets infected with some kind of organism to meet which a further excitement on the part of the Kapha results in the aggravation of this inflammation. In the production of this Kapha-Shotha preliminary Kaph-Prakopa is more essential than the infection, since without the former the latter is not likely to occur.

If the Kapha-prakopa following infection is strong enough to deal with both the invader and metabolites it gradually subsides and the inflammation along with other symptoms comes to an end.

If on the other hand the reaction (prakopa) on the part of the Kapha is not sufficient to check the invading organism and to flush out the metabolic malproducts (Ama) the struggle continues, the disease assuming a chronic form, till either the Kapha—the protective agent of the body—or the invading organism prevails upon the other (dirghroga).

DISEASES ARISING FROM THE COMBINATION OF THE VAYU PITTA AND KAPHA WITH ONE ANOTHER

In case, the excitability of the Pitta increases along with that of the Vayu such symptoms as high temperature haemolysis, excessive formation of bilirubin, erythematous rashes, haemorrhage, suppuration etc. resulting from the excessive Agni Karma (destructive process) of the body, arise in an acute form.

Similarly, excitability of the Kapha occurring in conjuction with that of the Vayu gives rise to such symptoms as congestion of fluid local or general swelling, flow of some viscid fluid, loss of appetite malaise, lethargy, dullness, drowsiness, slight rise of temperature etc. that result from the enhanced protective activity (Jal Karma) in response to the increased accumulation of the metobolic malproducts. Obviously the protective reaction on the part of the Pitta and Kapha cannot be so effective while the Vayu or Pran Shakti is out of order or the vitality is lowered. Therefore the Prakopa of the Pitta and Kapha occurring along with that of the Vayu is camparatively more serious.

If the Pitta and Kapha get excited together *i.e.* both the destructive and constructive processes become active at a time, the opposite symptoms of both are found side by side, either of them being ascendent over the other.

In case all the three doshas get disordered or excited simultaneously, that is, when vitality is lowered on the one hand and on the other hand the two defensive forces of the body namely the catabolic and anabolic activities (Agni Karma and Jal Karma) that remove catabolites, react against the invading organisms, also have grown sensitive and excitable, the outlook of the disease is bound to be serious, the more so the more is the Vayu deranged. Derangement of the Vayu or loss of the Pran Shakti (or excitability of the vital energy) manifests itself by giving rise to such symptoms as spasmodic contraction, cramps, tremors of limbs, twitchings of muscles, stiffness, hemiplegia, monoplegia, fits, exaggeration or abolition of reflexes (motor symptoms) hyperaesthesia, hyperalgesia, anaesthesia, tingling, (Sensory symptoms) insomnia, delirium, failing mental power, defects of cerebral nerves (cerebral symptoms) want of tone in muscles, nerves, heart, blood vessels; loss of heat, onset of the signs of degeneration etc.

To sum up, the factors that increase sensitivity of the Vayu Pitta and Kapha and thereby render them predisposed to the state of their prakopa are called as 'Dosh Vardhak' ones, and the state in which they have grown more sensitive or irritable is called the state of their Vridhi. In this state of Vridhi of the Vayu or Pitta or Kapha some bodily 'Malas' or 'Vishas' (excretory or poisonous substances) are apt to accumulate in the body. If their accumulation exceeds the normal limit (upto which they are dealt with physiologically) they get localized in an organ on their way out, providing a suitable medium or soil for bacteria to grow upon. The toxin or virus of the infective agent cannot but provoke the Vayu, Pitta and Kapha and they in a fit of their excitement called 'Doshprakopa' or disease try to drive the invading organism out and get the body rid of all 'malas'. Thus the Vridhi of the Vayu or Pitta or Kapha is considered to be an essential aetiological factor in the production of disease in Ayurveda.

The Vridhi of the Vayu or Pitta or Kapha is brought about in general (1) by the overuse (Atiyog) want of use (Ayog) or wrong use (Mithyayog) of our sensory and motor argans. (2) by ignorance, mental defects and errors of judgment of ours (Prajnaparadh). (3) by sudden changes in weather etc.

Regarding the Ayurvedic treatment the measures that serve to restore and replenish the lost energy vigour and strength and remove the causes that lead to atony of the body are called as 'Vayu Shamak' ones. The ways and means that go to eliminate the products of the break-up of the body and pacify its accelerated catabolism are called as 'Pitta Shamak' measures. Finally, the treatment that tends to speed up the process of oxidation and thus by oxidizing the products of incomplete digestion (Amas) quietens the excited activity of the Kapha (or protective activity) is called as Kapha Shamak one.

CHAPTER VIII

The Tridhatu Theory reviewed

Health and disease may best be defined as order (Samata) and disorder (Vishamata) among the fundamentals of the body. As to the nature of these fundamentals, they are the same as those of the non-living world, namely, the Vayu or the Energy, the Agni or the destructive element and the Apa the constructive element. The Akash or Space and the element of solidity or grossness (Prithvi) are left out, for their passivity, in the consideration of physiological phenomena.

In context of the living world these elementary substances or motive powers are called Tridhatus—the Vayu, Pitta and Kapha—respectively. This difference is only in names and not in substance. These substances, in fact, are subtle and imperceptible, yet they are met with acting in cooperation with one another, in every cell of the body. Due to these three motive powers all normal activities of the body may be divided into three categories *i.e.*, some of the activities are physical or locomotive, some are digestive or oxidative and some are constructive, in their nature. On account of these elements all abnormal activities *i.e.*, abnormal reactions on the part of the body too, are found to be of three kinds. Thus, some of the pathological activities are physical in nature occurring for the removal of excitants, some are digestive arising to digest the irritants and some are protective taking place to safe-guard the body against irritants.

As regards the excitants of the body, they are of toxic, bacterial, metabolic, chemical or of physical nature. The excitants acting under the temperature lower than that of the body and under such conditions as debilitate it tend to excite the Vayu while the excitants working under the temperature higher than that of the body and under such conditions as stimulate metabolism are likely to excite the Pitta or the catabolic element of the body. Finally the excitants that work under the temperature lower than the normal one in conjunction with such conditions as tend to slow the rate of metabolism are likely to excite the Kapha. Obviously, it is susceptibility or predisposition of the tridhatus of the body rather than the presence of the excitants in it that determines incidence of disease.

The state of their susceptibility in the face of excitants is called their vridhi or increment and the same growing into the state of excitement due to the continued impact of excitants is called their Prakopa. It is the Prakopa of any one two or all of them in various degrees that constitutes disease.

The Vayu or vital energy enters into the state of predisposition under the effect of some slow and chronic excitant resulting from such factors as intestinal intoxication or focal sepsis ; overuse of intoxicating drugs, drinks and foods ; continuation of some worry, frustration, restlessness, fatigue, mental or physical shock (all of which are supposed to produce some kind of toxin) chronic infection with malarial, syphilitic, dysenteric and other bacterial poisons, and want of essential food elements in diet. Eventually a severe mental, physical or toxic shock leads to the excitement of Vayu, which in response to it gives rise to some kind of hypermotility, hypersensitivity or cerebral disorder constituting the Vayuroga. For the prevention and treatment of that, such dietetic, hygienic and therapeutic measures as restore tone and strength to the body, and as eliminate the causal toxins without debilitating it, are suggested. In order to avoid the excitement of Vayu arising from mental conflicts a critical or logical attitude of mind instead of emotional one is to be cultivated.

The Pitta or the causal element of catabolic activity gets into the state of susceptibility by the misuse of such foods and drinks and under the baneful effect of such factors, as are overstimulant and unduly irritant, and as a result a greater amount of catabolites than the body can dispense with is generated. In this state of the body, the Pitta gets excited easily, if an excitant were to come in contact with it ; and whife reacting, it gives rise to such symptoms as acute inflammation, suppuration, haemolytic anaemia etc. called Pittarogas. For the prevention and treatment of them such dietetic, hygienic and medicinal measures as are soothing or sedative to the catabolic activity and as purge the body of its catabolites, are prescribed.

The Kapha or the constructive element of the body grows susceptible in case a greater amount of metabolites than the body can dispose of is accumulated in it, and that occurs under such conditions as (high living with want of exercise etc.) turn metabolism in favour of its formative aspect. In this state of the body (the state of Kapha Vridhi) if a mild infection takes place it acts like an excitant and the Kapha in its reaction produces such conditions as inflammatory swellings, hypertrophies, over-growths etc., called as Kapharogas. For the prevention and treatment of them, fasting, light foods, exercises and such hygienic and therapeutic measures as stimulate the digestive process and tend to eliminate the causal metabolites, are indicated.

By observing temperance in life and following the rules of health both their predisposition to excitement and the consequent accumulation of metabolites (amas, malas or doshas) can be prevented. In this state while the body is Nirdosha (or free from doshas resulting from the disorder of the tridhatus) the ensuing infection not finding a suitable soil remains ineffective. Natural predisposition of the tridhatus, on the other hand, occurring at certain periods of life and during the change of weathers can be prevented by making appropriate changes in diet and in the mode of life, while accumulation of malas can be got rid of by means of the Panchkarmas.

A truth emerging from this study of Ayurveda is that to lay whole blame on bacteria or external agencies is erroneous, as is the blind faith in medicines. In order to recover health Ayurveda lays emphasis on restoration of the tridhatus to their normal state. Medicines can help one in achieving this object but to depend on them for health is erroneous. Hence to entertain a hope that all diseases on a future date will have their own specifics as well as the hankering of humanity after wonder-drugs and magic cures is sure to remain a dream or a mirage.

In Ayurveda, instead of relying on medicines one is taught to rely on one-self and take care to keep one's tridhatus in order. In disease one is taught to take all such measures as counter the over-excited Dhatu and thereby restore it to its normal state. The tridhatus are kept in order by avoiding all that lowers vitality (or excites (Vayu) and all that tends either to overstimulate or overdepress metabolism (or excites the Pitta or Kapha respectiveley).

According to Ayurveda an organ gets diseased either due to the lowering of its vitality or due to the over excitability of its destructive or constructive activity or due to the combination of all these factors. Thus every disease in Ayurveda is said to be of four kinds *i.e.*, it is due to the over-excited Vayu or Pitta or Kapha or to simultaneous excitement of all of them.

This tridoshic approach of Ayurveda distinguishes it from Western system of medicine whose approach to physiology is chiefly cellular and to disease is mainly bacteriological. Both the systems describe the same picture but from different stand points, hence the diversity inspite of unity between them.

As to the scientific nature of these theories, they were not propounded by men of science but by men of wisdom and insight as the most workable hypotheses to explain phenomena of the living and non-living world. However, they appear to be fully in conformity with science. The ideas of space, energy, light, liquidity and mass or solidity (or of the Panch Bhutas) is in no way inconsistent with science. The Panch Bhuta theory states that atoms or smallest particles of substances are composed of space, energy, heat, liquidity and mass or solidity and due to predominance of one or the other of them, substances act differently. Thus the actions of different substances are explained in the light of Panch Bhuta theory. There is not much difference between this theory and the statement made by science regarding the nature of the physical entities. Science has established that all chemical elements and their compounds are made up of atoms that are composed of still smaller particles, that is, positively charged minute central nucleus consisting of positively charged proton, uncharged neutron, and some other unknown particles, all of which are responsible for nuclear forces ; surrounded by negatively charged electrons, the number and arrangement of them determining the properties of the atom. Large amounts of energy are involved in binding together of these particles in an atom but as positive and negative energies are usually present in equal amounts no energy seems present. Besides this, science has established existence of the particles of light called Photons. The properties of liquidity and mass formation or solidity also are inherent in every particle of matter. Thus the theory of space, energy, light (or heat) liquidity and solidity called the theory of Panchtatwas is not out of line with science.

In spite of science having made rapid strides in investigating physical entities it is still far from its destination. Perhaps the basic elements of the material world will always remain elusive. Under such conditions the hypothesis that works well in explaining and solving the problems arising in the study of natural phenomena is accepted as a workable theory. Therefore the conception of Akash, Vayu, Agni, Apa and Prithvi constituting the five successive stages of matter satisfies us in understanding physical phenomena. The tridhatu theory—the conception of the Vayu, Pitta and

Kapha—helps us in explaining various physiological and pathological functions. Similarly the trigunatmak theory or the conception of Satwa, Rajas, and Tamas is of great service in interpretting the psychological behavior of living beings.

CHAPTER IX

Tridhatus in relation to Bacteria

Although the human body is surrounded by bacteria that live in large numbers on the skin and most of mucous membranes it escapes disease so long as the tridhatus composing the tissues are in their normal state. That is why 'healthy carriers' of even virulent type of bacteria-contacts who have never suffered from the disease—are found enjoying apparently normal health, and why artificial means of producing infection sometimes prove unsuccessful. In fact for the bacteria to start an infection some abnormal condition/in the body seems to be essential. In health, bacteria appear to serve human beings in as much as they consume bodily excretions.

So long as the tridhatus are in order they offer a complete barrier to the passage of bacteria. The foremost defence against bacteria that renders them inert and keeps them from growing in numbers is the Kapha of the plasma and tissue-fluid which in respect of this property is called 'Ojas'. It has never been isolated but the non-specific normal opsonic power of the blood-serum points out to the existence of this substance.

The Pitta or fire of life inherent in the animal tissues, also, protects the body against bacteria by digesting or converting them to harmless substances. Existence of lysozyme and other bactericidal substances in the animal tissues is an evidence to prove their bacteriolytic property.

The Vayu besides the Kapha and Pitta defends the body by mechanically removing bacteria from the mucous membranes of different channels. Various movements taking place in them indicate its existence.

Thus, in health, the tridhatus keep the body immune against bacteria. Artificial means of producing immunity too are helpful so long as the tridhatus—natural forces of the body—are in order or capable of being supported by these extraneous means that only can supplement and not supplant them.

Circumstances for the growth of bacteria, however, become favourable as soon as the tridhatus get weak or susceptible due to the accumulation of malas or foreign substances and consequently grow incompetent to deal with them properly.

In case the Kapha is weak and unable to resist bacteria it gets excited *i.e.* produces an exudative inflammation and thereby succeeds in checking their growth. If the Pitta or digestive power inherent in the living tissues grows weak it gets excited in face of bacteria *i.e.* gives rise to suppurative inflammation and thereby stops infection. In case the Vayu or vital energy of the living tissues has grown weak it gets excited in response to infection, giving rise to such symptoms as asthmatic fit, vasomotor rashes, intestinal spasms, emotional fits etc., all of which are meant to dispose of infection.

Thus on the one hand it is susceptibility of the tridhatus that renders one a suitable host for bacteria to multiply in and on the other when infection starts it is the tridhatus that as defensive forces of the body react locally and generally to counter bacteria. They appear to play more important part than bacteria in bringing about disease.

An ideal system of medicine should pay more attention to prevention than to treatment and should offer a perfect scheme of personal hygiene capable of maintaining our natural immunity. Ayurveda holding the view that infection does not take place unless and until the tridhatus of the body are deranged, is bound to give more importance to prevention. Moreover, it prescribes, a complete code of personal hygiene believed to confer immunity. Silence of western medicine on this point is explicable in view of its belief that disease starts from outside of the body, while Ayurveda holds that it starts from within.

Eventually, when infection does take place the body begins mobilizing its natural forces to meet it. Therefore the objective of an ideal system of medicine ought to be to assist the body in the attempt. Ayurvedic treatment, accordingly, tries to regulate the tridhatus or the three innate forces of the body and enables them to fight against infection.

Though in antibioltics of the western system of medicine, we have powerful bacteriostatic medicines yet in supplying the body with ready made protective substances do we not make the natural forces of the body inactive and thus render it more susceptible to future infections ? If drugs, instead of assisting, began doing the functions of the body, its natural forces are sure to grow weak.

Another feature of an ideal system of medicine is that it cures disease and not merely relieves symptoms. Ayurveda maintains that since the cause of disease lies in the disorder ~~t~~of the tridhatus, with the re-establishment of order among them, both the disease and its symptoms come to an end. The art of suppressing symptoms taught by modern pharmacology, of course, reduces distress but does not cure disease.

Besides, Ayurvedic medicines being mild in their properties cure disease without injuring tissues while allopathic medicines being very active prove more or less toxic to the body also.

Again, an ideal system of medicine should be easy of access or available to all. Ayurvedic treatment can be applied with easily procurable articles and household remedies. For instance, to treat a disorder of the Vayu or to promote general or local vitality, such simple measures as administering of an available oil (sesame oil, caster oil, olive oil etc.) along with garlic, asafetida, ginger etc ; applying of hot oily fomentation, douching with hot saline, prescribing of hot, light, nourishing diet and rest etc., will do. To allay excitement of the Pitta, such measures as administering of a cathartic or of any available drug of cooling and demulcent nature or of ghee or butter, letting out of blood, applying of cold pack or mud plaster, will serve purpose. Similarly to correct different disorders of kapha or various forms of catarrhal congestion, adoption of such simple means as fasting or giving of very light and dry diet, administering of Haritaki or triphala or pippali with hot water or hot drinks, use of honey or cow-urine will suffice. That is why people derive greater benefit from Ayurvedic system of medicine than from the western, which though very rich in its medicinal stock, is not easy of access.

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